March, 1958 50 cents

U. S. Fish Position at Geneva p1

Aid takes new tack in Congress p9

PACIFIC FISHERMAN

MAR 1958
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TUNAMEN AND THE TUNA SEAS—Matt Simundich, master of "Sea Spray", points and John Sima of "Santa Teresa" studies a course for the future. They are, respectively, newly elected president and secretary-treasurer of the Fishermen's Cooperative Association, San Pedro.

A MILLER FREEMAN PUBLICATION

B.F.Goodrich

Spongex® floats . . . hot stuff below the equator

Fishermen everywhere are switching to B. F. Goodrich "Spongex" seine floats. The latest in Mancora, Peru, is "Consula," short for CIA. de Negocios de Ultramar S.A. Used for tuna, swordfish and anchovy operations, B. F. Goodrich "Spongex" floats once again proved their superiority over every other seine float on the market.

B. F. Goodrich "Spongex" seine floats are single molded units that will not break, crumble or split. Made of polyvinyl chloride, they need no maintenance, will not absorb water; are impervious to oil, gasoline and sea growth. Very light and buoyant, fewer B. F. Goodrich "Spongex" floats are needed to support your nets.

So give your fishing operation all the advantages of these practically indestructible floats. Seventeen sizes now available ranging from 1½" x 6" with ½" hole to 14" x 6" with 1" hole.

For more information write The B. F. Goodrich Company, 445 Derby Place, Shelton, Connecticut.

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B.F.Goodrich

Spongex seine floats

PACIFIC FISHERMAN

Our Fifty-Sixth Year— **MARCH, 1958** **Vol. 56** **No. 4**

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What is U.S. Position On Fisheries at Geneva?

● International law shaping the world's fisheries for the future will emerge from the current conference in Geneva, but that is many weeks—perhaps months—away.

The United States delegation apparently went to Geneva with a definite national position on points affecting fisheries, for on the eve of its departure Assistant Secretary of State William B. Macomber Jr. outlined that position specifically to Washington Senator Warren G. Magnuson.

He said that many of the problems plaguing fisheries are wrapped up in the present-day tendency on the part of some nations to stretch territorial claims beyond the traditional limit, adding "Implications of this trend of events on the security interests of the United States and the rest of the free world are readily apparent". However, there is some reason to believe that the United States is prepared to accept Canada's proposal that the three-mile limit for security and navigation purposes be extended to 12 miles for fisheries conservation. Canada press dispatches report American acceptance of this thesis, following Ottawa's promise that traditional American fishing grounds would not be affected.

Adoption of "a conservation procedure termed 'abstention'" is regarded as of great importance among fisheries proposals at Geneva, Mr. Macomber said. "This would provide an incentive to states to build up, restore and maintain the productivity of stocks of fish. Under these conditions, states not having contributed to the productivity, excepting the coastal state contiguous to the waters in which the stock occurs, should abstain from fishing the stock. Such a procedure would cover the salmon and halibut fisheries".

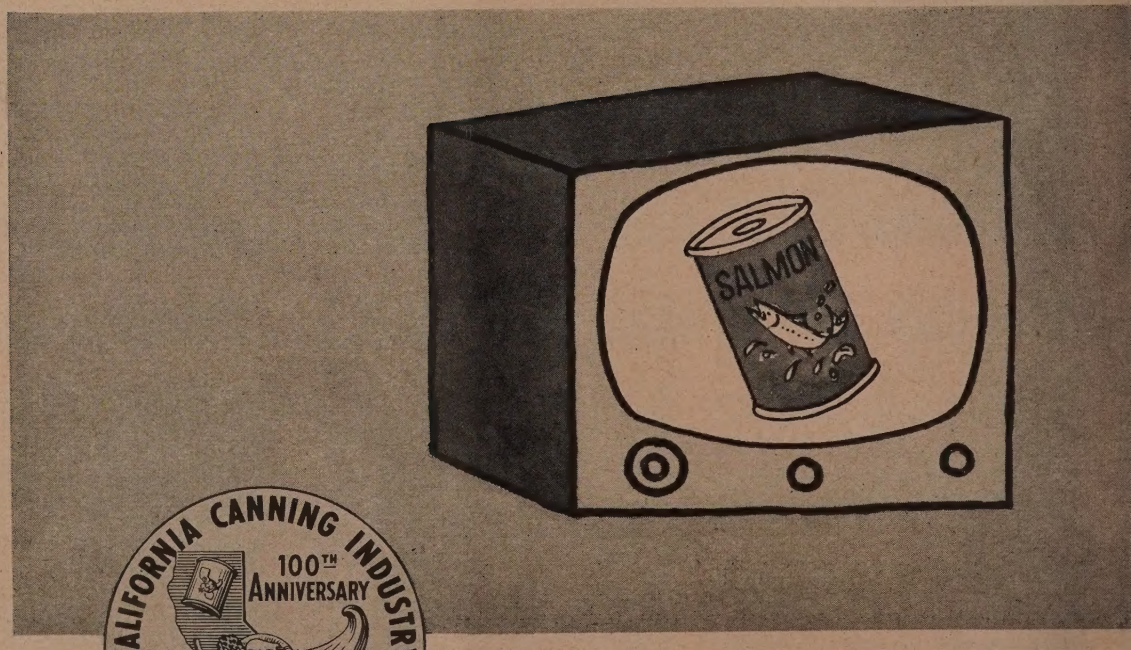
A second fisheries point in the United States' position would "specify the procedure to be followed with respect to arrest and prosecution of foreign fishermen accused of operating in violation of conservation measures promulgated by the fishing of adjacent states."

The fisheries section of the American delegation to the Geneva conference is headed by William C. Herrington, Department of State special assistant for fisheries, with Arnie J. Suomela, commissioner of the U.S. Fish and Wildlife Service, as vice chairman. Industry advisers accompanying the delegation include Milton E. Brooding and Edward W. Allen, members of the International North Pacific Fisheries Commission; Dr. W. M. Chapman of the American Tunaboat Association; George Steele of the National Canners Association; James E. Barr of the Texas Shrimp Association; William Neblett, Florida deputy state solicitor. T. F. Sandoz of the Association of Pacific Fisheries is expected to join the delegation later.

Moscow—

● Soviet and Japanese negotiations seeking a basis for 1958 fishing operations dragged into March with no sign of settlement on (1) Japan's request for close-to-shore fishing rights along the Kuriles; Soviet proposals for (2) closure of the Okhotsk Sea to salmon fishing; (3) all salmon fishing to end July 31; (4) Red salmon catch to be only 10% of total, Chums 25%, Pinks 60%, Silvers and Kings 5%, with 10% tolerance for each species; (5) reduction of 20,000 metric tons from the quota established for 1957.

The CANCO ova



CALIFORNIA CANNING INDUSTRY
100TH ANNIVERSARY
1858 - MERITO PRIMUS - 1958

Through merit to first place

s a symbol of service—

—in the research laboratory!

Canco scientists and technicians are constantly striving to develop better containers and better canning methods to help fish packers improve their products. Important Canco contributions to the salmon canning industry, for instance, include the collapsed can which made possible the economical shipment of containers to Alaska. The salmon filler, another famous Canco development, resulted in the industry's first high speed canning lines.

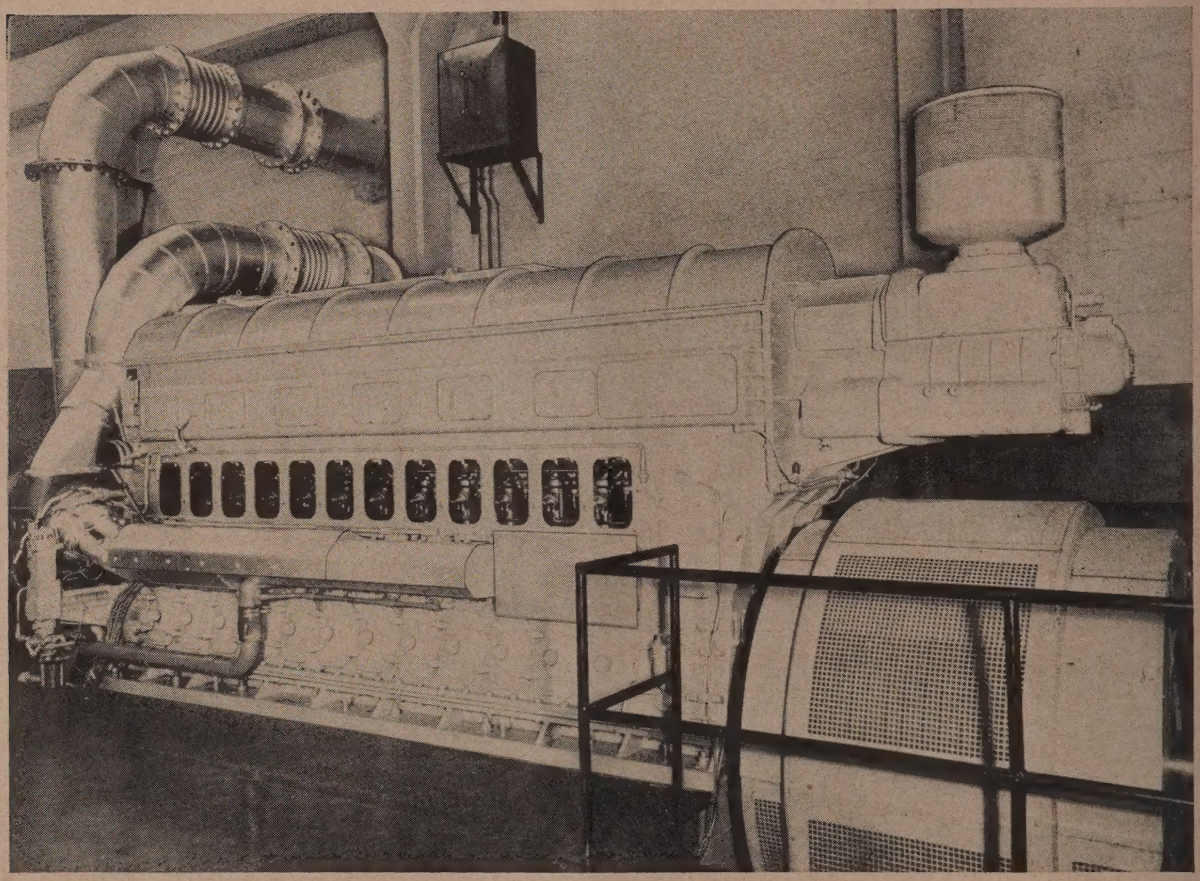
—on the nation's TV screens!

Canco sponsors the top-rated CBS-TV show, "Douglas Edwards With The News," seen by millions all over America. As another service to you, Canco regularly uses this "blanket" coverage to promote the use of fish products in cans. On February 21, for example, both of the show's commercials were devoted to canned fish—and one specifically highlighted the many consumer advantages of salmon in cans. No matter what kind of sea food *you* pack, Canco works with you to better your product *and* to help you sell it!

TUNE IN *Canco's show,* "DOUGLAS EDWARDS WITH THE NEWS,"
alternate Friday nights, CBS-TV. Check local paper for time and channel.

CANCO **AMERICAN CAN COMPANY**

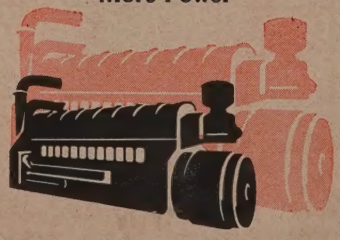
NOW Fairbanks-Morse TURBOCHARGED



Now from Fairbanks-Morse comes the year's most significant power news: the Opposed-Piston diesel is turbo-supercharged!

Backed by 20,000 hours of actual operation and research, this new, yet proved, design increases O-P horsepower by 50%. At 900 rpm., for example, the turbocharged O-P is conservatively rated at 300 hp. per cylinder. Combining simple, two-cycle Opposed-Piston design of engine with new Fairbanks-Morse-designed system of turbocharging produces compact, reliable power with low operating and maintenance costs. None of the basic O-P advantages have been eliminated. In fact, many parts are interchangeable between turbocharged and non-turbocharged Opposed-Piston engine models.

More Power

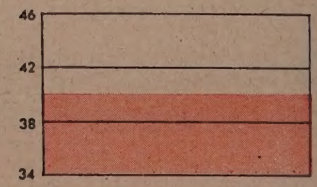


The un-turbocharged O-P is the industry's leader in compact power . . . now 50% more power can be placed in the same installation with the same size turbocharged O-P.

Lower Weight

—per horsepower. Increased O-P power is more widely applicable where weight and foundation costs are restrictive. Weight per horsepower has been reduced by 27%.

Increased Thermal Efficiency

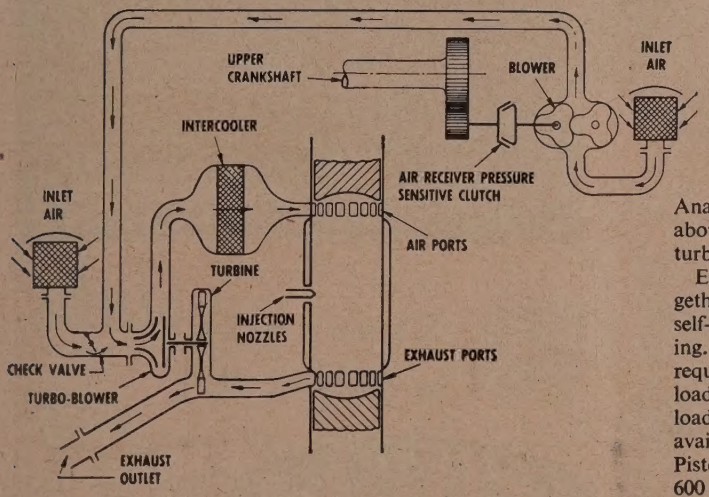


The new, performance-proved thermal efficiency of the turbocharged Fairbanks-Morse Model 38TD-8⅛ O-P diesel is knocking on the door of a new high of 40% efficiency.

OPPOSED-PISTON DIESEL

50% MORE POWER

for Marine and Stationary Applications



Matched Engine and Turbocharging

Analysis of many turbocharging options established the above arrangement for optimum performance of the turbocharged Opposed-Piston diesel.

Exact matching of O-P engine and this system, together with manifold design, results in an engine that is self-sustaining over the entire load range, including starting. The small engine-driven auxiliary blower meets the requirements of sudden, large load changes at fractional loads only—and is automatically declutched above ⅓ load. Power formerly used for blower drive is therefore available at the flywheel of the turbocharged Opposed-Piston Diesel. Fairbanks, Morse & Co., Dept. PAF-3, 600 S. Michigan Ave., Chicago 5, Ill.

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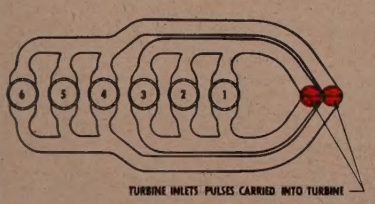
a name worth remembering when you want the BEST

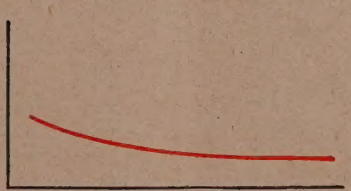
DIESEL AND DUAL FUEL ENGINES • DIESEL LOCOMOTIVES • RAIL CARS • ELECTRICAL MACHINERY • PUMPS • SCALES • HOME WATER SERVICE EQUIPMENT • MAGNETOS

Pulse System



F-M exhaust manifolding carries peak pulse energy directly to the turbine drive, thus taking full advantage of additional driving force available in these exhaust pulses.

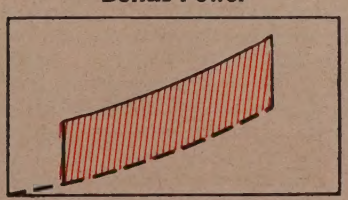
Lower Fuel Consumption



½ LOAD FULL LOAD

For full-load operations, specific fuel consumption of the turbocharged O-P is 5% to 10% lower than un-turbocharged O-P—and very much lower for part loads.

Bonus Power



½ LOAD FULL LOAD

At loads above approximately ⅓ rating, the auxiliary blower is automatically declutched, thus making additional, usable power available at the flywheel.

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REGISTERED TRADE MARK
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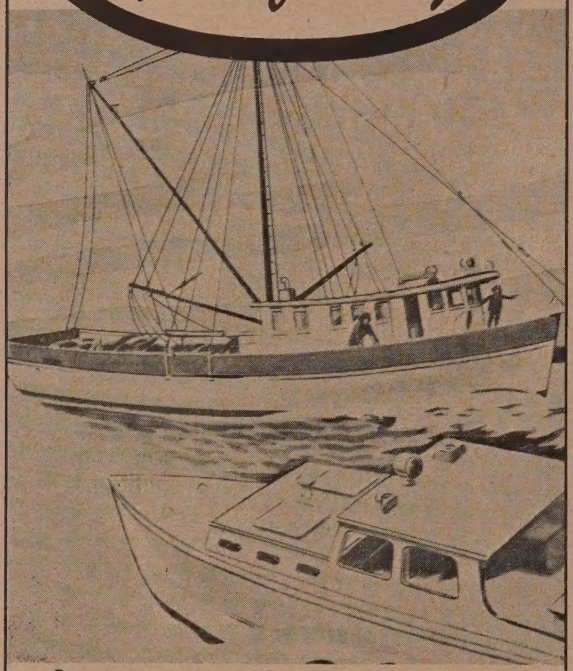
Paints

Interlux®

EFFECTIVE — ECONOMICAL
BOTTOM PAINTS
Antifouling



International offers a complete line of marine paints and varnishes. Each is a special product. Each does its job better than coatings supposed to serve a number of purposes. Because each product is formulated for a specific purpose, the result is a complete line in which every item is an outstanding product. The use and acclaim of INTERLUX products around the world for more than seven decades is further assurance that its use on your craft will prove a wise and long lasting investment in better appearance and more certain protection.

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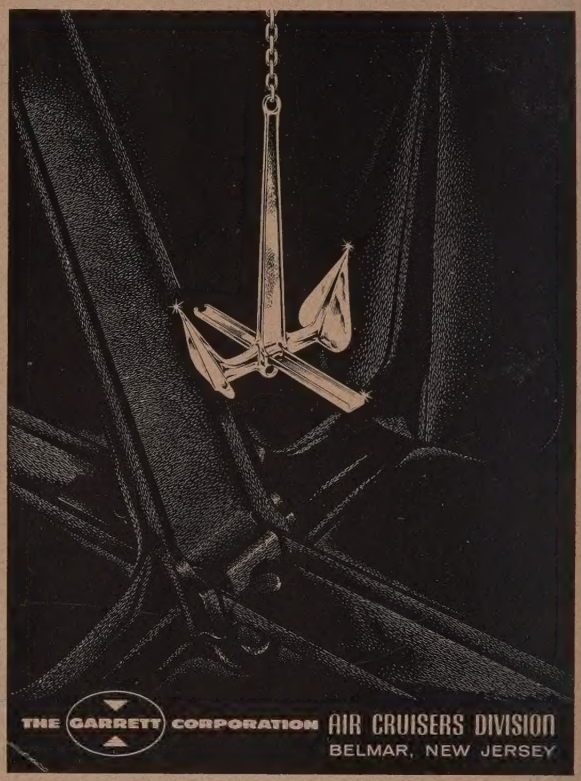
DIGS FAST . HOLDS FAST... BREAKS OUT EASY



Father tells son...

"There's LESS GAMBLE in fishing with

Pauls® NETTING"

Great, uniform strength...durability under the most rugged use...construction with the finest in tested, proved netting materials—these have been traditional for generations with Pauls Netting. They help take the risk out of fishing...make your fishing profits surer. Specify...

- Pauls "Lockknot" D. K. Salmon Gill Netting (Linen or Nylon).
- Pauls Cotton Netting.
- Pauls Dyak Netting.
- Pauls Nylon Gill Netting.
- Pauls Nylon Seine Netting.
- Pauls Seine Twine (Seine Twine in Cotton, Filament Nylon, Spun Nylon and Dyak)

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Alfred Puusti & Company
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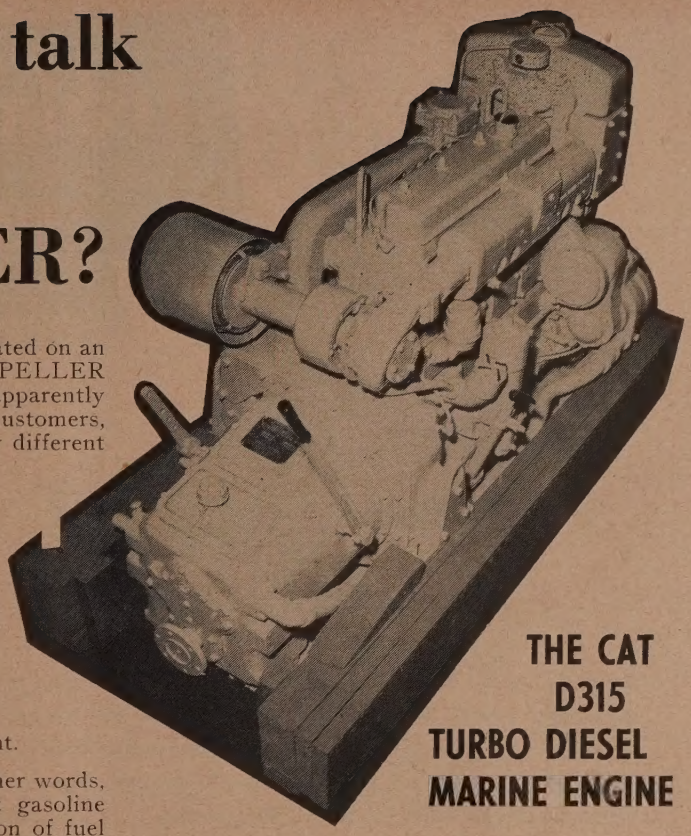
Astoria, Oregon

What's all the talk about . . . . . HORSEPOWER?



THE CAT D315 TURBO DIESEL MARINE ENGINE

Cat diesel marine engines have always been rated on an HONEST HORSEPOWER TO THE PROPELLER basis. This has always made sense to us—but apparently has confused a lot of our prospects and customers, because other engine people use a completely different "system".

It all comes from automobile advertising, I guess—which is in a way like cigarette advertising. Take the big car we use here for driving VIP's around. The current version is supposed to have 345 HP, but we took the trouble to put ours on a rear wheel dynamometer—and with some adjustment were able to get 140 HP. This power was developed at a screaming RPM—and we imagine the parts would have started flying after 30 minutes or so of this treatment.

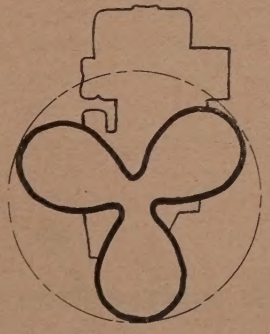
At 80 m.p.h., this car produces 10 m.p.g. In other words, it is burning eight gallons per hour. Most gasoline engines produce about 10 HP for every gallon of fuel they consume per hour—and on this basis the "345 HP" engine at 80 m.p.h. is only delivering about 80 HP.

Well, marine engines are just about as bad. The other day we were comparing a 48' x 13'6" x 5'6" motor-sailer, powered with a popular six cylinder, two-cycle marine engine, and the heavy (60,000 lb.) commercial fish boat ANGELINA—of approximately identical dimensions and much greater weight. The yacht was advertised to cruise at 8 knots—although the engine had a top advertised rating of approximately 225 HP. The ANGELINA, with one of the new small but heavy duty Caterpillar D315 turbo diesels producing 80 continuous horsepower **at the propeller,** turns a 44" diameter propeller—and ANGELINA will clock 9 knots on a continuous cruising basis.

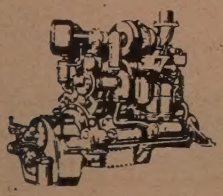
We note a strong trend toward dependable, honestly-rated Caterpillar turbo diesel marine engines in all sizes. For example, we have just replaced two tandem two-cycle, six cylinder propulsion units in the BETTY LOU, an outstanding San Diego sportfisher. While the old engines were "rated" at 360 HP each—our new D353 turbos, producing 290 HP at the propeller, increased the speed of the BETTY LOU by more than 1 knot.

Should we adopt bally-hoo advertising for our Caterpillar turbo marine engines? We don't think so, because the rapidly increasing number of Caterpillar marine engine customers know the facts. As a handy rule of thumb, however, so that you can evaluate your own marine diesel—multiply your hourly fuel consumption in gallons by 15, and you'll have a rough idea of the true horsepower you are getting.

Another thing—Caterpillar marine engines thrive on the heavier diesel fuels—where you get real value for your fuel dollar. If you are interested in honest horsepower for your boat, call Dan Palmiter at RAymond 3-7191.



This drawing of a 44" prop super-imposed on an outline of the Caterpillar D315 turbo charged diesel marine engine is a good size comparison. As you see, the propeller diameter is fully equal to the height of the engine itself.



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Listed below are some of the natural and synthetic ropes and twines in Columbian's wide range of fishermen's cordage. These are "stock" items, available from your dealer's shelves or easily secured. There are many others listed in our catalog . . . and many beyond that being developed regularly through our continuing research program. If you have need for a special cordage not listed here or in the Columbian catalog, just tell your dealer, or write the company direct.

Columbian NYLON and DACRON Ropes and Twines

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You'll find no ravelling in these soft handling, easy-to-splice ropes and twines. Columbian Nylon cordage is "Stabilized" by an exclusive patented process pioneered by Columbian to prevent untwisting and loss of shape. No lost yardage due to "fluffing" — even end-knots are made with ease!

Columbian MANILA and RADIUM SISAL Ropes and Twines

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Every Manila and Radium Sisal rope and twine made by Columbian for fishermen's needs is thoroughly waterproofed . . . treated to prevent mildew, mold and rot . . . and lubricated to eliminate internal friction. Special Copperized, Red Kopper, Tarred and other treatments protect cordage made for unusually severe conditions.

There is a Columbian Rope or Twine exactly right for your uses, your type of fishing, your methods of handling.

COLUMBIAN ROPE COMPANY, Auburn "The Cordage City", N.Y.

The Rope with the Red, White and Blue Markers

PACIFIC FISHERMAN March, 1958

Aid Takes a New Tack

"Grants-in-Aid"

"Construction Subsidy"

"Incentive Payment"

● Aid for "depressed segments of the fishing industry" without doing violence to the national policy of encouraging foreign trade with the free nations of the world is being sought in Congress through a bill sponsored by five senators of both parties.

Perhaps recognizing the difficulty of securing tariff increases or import quotas in time and degree which would effectively assist the "depressed segments of the fishing industry," the bill approaches the problem over the paternalistic path marked out so plainly by years of treading for the farmer's benefit.

It frankly bristles with such terminology as "grants-in-aid" . . . "construction-differential subsidy" . . . and "incentive payments."

The bill, officially S. 3229, was introduced by Senator Saltonstall, Republican, Massachusetts, on behalf of himself, his Massachusetts Democratic colleague Senator Kennedy; Senators Payne and Smith of Maine, both Republicans; and Senator Magnuson, Washington Democrat.

● The bill appeared in Congress coincidentally with increased Administration pressure for passage of an unpruned bill for foreign aid—from the past generosity of which some substantial portion of the problems of the American fishing industry may have sprung.

With foreign imports considered by fishermen as the prime source of their economic problems;

With further foreign aid promising additional props for the economy of the producers of these imports;

With effective tariff and quota treatment apparently barred by national policy—

The five senators switched their strategy sharply into line with the pattern of internal benefits paid from the national purse instead of protective restraints on foreign imports.

Very briefly, provisions of the bill are these:

● *Grants-in-Aid*—(a) Flat cash grants of 50% of the cost of installing safety devices beyond those now required by law;

(b) 90% of the cost of inspection and 50% of the cost of alteration necessary to bring a vessel into line with American Bureau of Shipping standards;

(c) $1,000 toward the cost of improving holds in order to raise quality of fish landed;

(d) 30% of the cost of equipment for freezing fish at sea;

(e) 50% of the cost of machinery necessary to "promote plant operating efficiency, to improve methods of handling, processing and packaging of fish, and to achieve and maintain uniformly high standards of quality of fishery products produced by fish processing plants."

● *Construction-Differential Subsidy*—Outright subsidy to qualified fishermen for new replacement of fishing vessels, the subsidy being equal to the difference in cost between construction of the vessel in a domestic yard and by a foreign builder.

● *Plant Loans*—Provision for extension to fish packing plant modernization and new construction of 3% ten-year loans under conditions similar to those now available for fishing vessels; and appropriating a fund of $6,000,000 for this purpose.

● *Incentive Payments, Fishermen*—Of 1c per pound of fish landed, payable to vessel owners who observe methods of handling fish to improve quality prescribed by the Secretary of the Interior; also additional payments, deemed "fair and reasonable" by the Secretary, to compensate vessels for exploratory fishing operations, and for utilizing experimental gear, which may be furnished by the government.

● *Incentive Payments, Processing*—Cash grant to any processor of ⅓c per pound "to promote and encourage greater operating efficiency in the handling and processing of fishery products derived from domestically produced fish."

● *Miscellaneous Benefits*—In addition, the bill provides (a) government service for reporting insurance claims and payments;

(b) Free inspection and grading of fishery products;

(c) Free "units of mobile, auto-

matic equipment suitable for unloading and handling fish from fishing vessels" . . . as may "demonstrate the feasibility and economy of improved methods of unloading and handling fish."

● The bill was referred to the Senate Committee on Interstate and Foreign Commerce, of which Senator Magnuson, one of the sponsors, is chairman.

Off-hand reaction of the Man-in-the-Street is apt to be a scoffed and scornful declaration that the bill has no chance of gaining life as law.

Maybe so; but that's what they said of the Saltonstall-Kennedy Act; the fishermen's loan fund; and the law to indemnify Americans damaged by interference of foreign nations with legitimate operations on what the United States considers the high seas.

They became law. It *could* happen again.

"Teeth" in Tariff Bill Best Hope for Tuna Help

● Hopes of the California tuna industry from legislative action to ease the impact of imports was shifting at presstime from the goal of direct legislation toward extension *and amendment* of the Reciprocal Trade Agreement Act, which spring reports from Washington indicated offered the best chance of action.

The industry hopes to see the present act extended with amendments giving it "teeth" so far as tuna protection is concerned. If the bill is extended with such armament, the tuna industry then hopes it can show it is being threatened by the tide of imports, and that the President then might apply the tariff increases authorized under such conditions.

Swing of tuna industry effort from specific remedial legislation to the general Reciprocal Trade Agreements Act resulted from decision by Representative Wilbur Mills of Arkansas, new chairman of the House Ways & Means Committee, has declared he is more in favor of amendments to the Reciprocal Trade Act to protect American industries than of specific tariff legislation on an industry-by-industry basis.

Representative Wilbur is cautious about the application of the "escape clause" or "peril point" provision, stating that although this was meant to save threatened industries, it has not always operated just that way.

Dr. W. M. Chapman, research director of the American Tunaboat Association, San Diego, after spending a week in Washington, was quoted as saying he saw little hope that Congress this year will pass tariff or quota control legislation to curb the rising imports of foreign tuna for canning.

He said the big trouble was that about 75 American industries, like the tuna industry, were being threatened by imports, and all want a hearing before the Ways and Means Committee. There just isn't time for all those hearings, and the committee has decided to hold no industry hearings at all.

● The Tariff Commission, which had promised Senator Kuchel of California it would have a report ready for the Senate Finance Committee in February, late that month said it would be April before the report could be ready.

Meanwhile, back on the waterfront, the fishermen's wives sprang to the aid of their husbands. Under the able chairmanship of Mrs. George Zeluff of San Diego, the Tuna Fishermen's Wives Emergency Committee opened an office in the southern city, and Mrs. Zeluff spent a week in Washington conferring with Congressmen King (San Pedro), Wilson (San Diego) and other interested leaders in Congress.

Mrs. Zeluff was quoted as saying that although the outlook for remedial legislation is at present discouraging, "we are going to fight for legislation no matter how dark things appear to be".

Four senators are co-sponsoring a measure that would set up a five-year plan to give financial help to "depressed segments" of the fishing industry. The proposed law would grant aid to fishermen or canners if they could show financial distress, would grant fishing vessel construction differential subsidies, would provide for loans for improving and building processing plants, and for incentive payments to fishermen and processors.

Referring to his bill, Sen. Leverett Saltonstall of Massachusetts remarked that although in recent years there has been legislation to help the fishing industry, the Government by and large has contributed more to the decline of the industry than to its progress.

Albert M. Day Named Oregon Fisheries Director

Albert M. Day, formerly director of the United States Fish and Wildlife Service, became director of the Oregon Fish Commission February 1.

Mr. Day was a career man with the U. S. Biological Survey and later with the U. S. Fish and Wildlife Service, becoming its director in 1946 as successor to Dr. Ira N. Gabrielson, and serving as head of the Service until 1953. He retired from the Federal service the following year and accepted a position with the Arctic Institute of North America.

While director of the Fish and Wildlife Service Mr. Day was a member of the International Pacific Salmon Fisheries Commission.

In the Oregon directorship Mr. Day succeeds Milton C. James, who for some years was assistant director of the Fish and Wildlife Service while Mr. Day was director.

John Hodges, who was Oregon acting director in the interim between Mr. James' return to the Pacific Marine Fisheries Commission and Mr. Day's appointment, resigned in December to accept a position with the U. S. Bureau of Commercial Fisheries.

Senate Backs Demand For Japanese Negotiations

The Foreign Relations Committee of the United States Senate favorably reported to the Senate February 20 the Magnuson-Jackson resolution submitted by the two Washington senators and calling upon the Department of State for immediate discussions with the Japanese government looking to agreement for cessation of fishing by all nations on intermingled salmon stocks of American and Asian origin.

Committee approval came after Chairman Theodore Francis Green said early action was sought by Senators Magnuson and Jackson "to assure negotiations being undertaken before the 1958 fishing season to prevent destruction of salmon stocks of North American origin."

Peruvian Sperm Whale Production Impressive

Preliminary estimates of the Peruvian 1957 sperm whale catch indicate that 2,363 sperm whales were caught and yielded 7,802 metric tons of sperm whale oil. It is expected that the 1958 sperm whale catch will be double that for 1957 due to the addition of a third new sperm oil plant in Peru about the middle of 1957.

Radioactivity and the Sea Fisheries

By
MILNER B. SCHAEFER

● Radioactive waste products create special problems, because they constitute biological hazards, because they cannot be eliminated by chemical treatments. They can be isolated or dispersed, but they cannot be destroyed.

Natural radioisotropes exist everywhere. However, one of the remarkable characteristics of the ocean is the very low level of natural radioactivity, much lower than in any other region on earth where life exists.

Three aspects of the atomic energy program are of interest in relation to the sea fisheries: (1) weapons tests over or in the sea; (2) disposal of radioactive wastes from nuclear power plants; (3) use of radioisotropes for oceanic research.

● Principal means by which artificial radioactivity in the oceans may represent hazards to men are through marine products eaten by man and his domestic animals.

First, because some of the radioisotropes created by nuclear reactions are concentrated by marine organisms up to several thousand-fold.

Second, because the harmful effect of a radioisotrope taken as food is very much greater than the same quantity in the external environment.

The limiting factor on the amount, kind and location of introductoin of radioactive isotropes that can be safely permitted in the sea will be the amounts that consequently appear in the fish and other food from the sea.

"Fallout" from Weapons

● To date, the only significant source of man-made radioactivity in the oceans has been from the testing of nuclear weapons. Fortunately, fallout onto the open sea is quite rapidly dispersed and diluted, so even quite large tests can be safely carried out at properly selected localities.

I do not want to minimize the very real hazards which can result in the vicinity of a weapons test over a short time period. The safety of such tests can be assured only if their planning and execution are based on adequate prior study of the oceanographic and biological regime in the area.

Among fission products, the most critical is strontium 90. The important factor is the ratio of radio-strontium to calcium in man's food products. Taking into account biological discrimination factors, we arrive at the interesting result that, for conditions of equal fallout, the strontium 90- calcium ratio in pelagic fish is a good deal less than in such calcium-rich terrestrial food products as milk.

Atomic Waste Disposal

● Within the foreseeable future, the problem of disposal of radioactive waste products from nuclear fission in power reactors will greatly overshadow the present problem of radioactive materials from weapon tests. Such waste products are of two types, low-level radioactivity and high-level.

So far only some low-level wastes have been introduced into the sea. High-level wastes have been taken care of by isolation underground.

In disposing of radioactive materials in the sea we may take advantage of two possibilities: (1) isolation of the materials so their entry into the part of the sea used by man is limited, and time is allowed for radioactive decay; (2) dispersion and dilution to keep concentrations at tolerable levels.

Coastal Waters

● Radioactive materials introduced into coastal waters enter directly into the part of the ocean most utilized by man, and from which he takes the greater part of his marine foods. Bottom living invertebrates and fishes of these waters heavily concentrate some elements that have radioactive isotropes hazardous to man. The quantity of radioactive materials that can be introduced into coastal waters is very limited, making it necessary to provide adequate safeguards against discharge of high-level atomic wastes from accidents to power reactors, either at locations on shore or ship-borne reactors.

The Deep Sea

● Certainly the quantities of wastes which can be safely introduced into the upper layers of the ocean are a good deal less than the expected production from the world's power reactors within the next few decades. Present knowledge is not adequate to determine whether expected quantities of wastes from power reactors can safely be disposed of in the deep sea. It will certainly be safe to employ quantities up to several tons a year in careful experimental studies.

If the possibility of disposal of any large quantities of fission products in the sea is going to be seriously considered, a very great deal of effort will have to be put into scientific research on the sea and its organisms.

Much of the basic research needed is identical with research required for evaluating and improving the harvest of the sea fisheries, and will provide much of the scientific basis for the optimum exploitation and conservation of the sea's living resources.

A Program

● These are matters of international concern, particularly insofar as the high seas are concerned.

A committee of the National Academy of Sciences has made specific recommendations thus:

"(1) That cognizant international agencies formulate as soon as possible conventions for the safe disposal of atomic wastes at sea, based on existing scientific knowledge; and (2) that the nations be urged to collaborate in studies of the oceans and their contained organisms, with the objective of developing comparatively safe means of oceanic disposal on the very large quantities of radioactive wastes that may be expected in the future."

NOTE—Dr. Schaefer is director of investigations of the Inter-American Tropical Tuna Commission, La Jolla, Calif., and formerly was on the biological staff of the International Pacific Salmon Fisheries Commission and the Pacific Oceanic Fisheries Investigations. This article is a condensation in his own language of an address delivered early this year before the Fishery Products Division of the National Canners Association.

JOHN VEATCH

—and his selfless service

● John Veatch retired some months ago as chairman of the Oregon State Fish Commission, closing an extraordinary career of service to the fishery resources and fishing industry of his state. He retired as he had worked, quietly, modestly, and without acclaim.

His years on the Oregon Fish Commission ran beyond 30, under numerous governors of both parties, who appointed and re-appointed him because he kept politics out of the state's fish commission, and the fish commission out of politics.

His was a long career, and remarkable for more than its length.

His service was selfless, and given with a courage which never counted the cost of courage.

To his duty he brought the best thought of a brilliant mind.

● No one but John Veatch has any concept of the endless hours which he took from his profession and gave to his state, without payment and without reward, save for that compensation which comes to a man from his own heart in the knowledge of work well done, and of duty as a citizen well discharged.

John Veatch's mind has sharp, incisive quality—but he never brandishes it. In all his long service he would sit through innumerable fish meetings, quietly listening, hour after hour. Then, when the smoke would get so thick and the confusion so compounded that you couldn't see through either, John Veatch would speak up in his quiet voice and with a few words of analysis would cut through the fog, lay bare the facts, and base on them a decision whose fairness and soundness no man ever honestly impugned.

● The figure of John Veatch stands, and will stand, as a model for men who feel an obligation to give of themselves, their time, energy and ability in unpaid public service, without thought of profit or of partisanship.

John Veatch chose to render his public duty to his state and its fishery resources. Oregon is richer for what he did, and for his unstinting sacrifice of time and thought.

But the man's work and character stand as a pattern for service in a far wider realm than Oregon—in national and international fisheries—in national and international conservation beyond the field of fisheries—in national and international duty beyond the scope of conservation.

Tiny Ocean Pink Shrimping Set Back by Feb. Storms

● February gales virtually shut-down the Pacific Northwest shrimp canning business as they made it difficulty-to-impossible for the draggers to work their gear on the green mud spots where the little Ocean Pinks are found.

On the Columbia River two plants were standing-by the middle of February, waiting for a chance to get into steady production. These were Pacific Shrimp, Inc., with a plant in the former Del Mar Canning Co. buildings at Flavel, Ore., and Seaside Clam Co. in the old Dunning cannery and freezer building at Warrenton.

In the first firm George Moskovita, a widely known Columbia River trawler, is principal. J. W. Anderson is plant superintendent. A. J. "Bud" Conger, another trawl operator, was formerly with the company, but withdrew early in February. A. P. Marchand heads the Seaside Clam Co., with Gordon Gouvey in charge of the plant.

This latter company in mid-February was completely sold-out of all goods and was piling up a notable backlog of orders.

Most of the Pacific Northwest shrimp operators are not now using artificial color in shrimp. Care in washing the shrimp meat after it comes from the Peelers machines, and particularly a minimum of washing consistent with complete removal of shell fragments, makes it possible to retain sufficient color to yield an entirely attractive pack, they feel.

Citric acid dip is believed to be used by all canners, and is considered quite beneficial. It seems to firm the meat after peeling, to fix the natural color, and to point-up the flavor.

● Larger companies on the Oregon and Washington coast are known to be watching the development of the less-than-one-year-old shrimp canning business with the closest of interest, but at presstime none had committed themselves to the operation.

What holds them back?

Well, they'd like to be assured that the volume stands-up under fishing; that today's eager buyers will be back for more tomorrow, and that Food and Drug won't react capriciously in the matter of labelling on these so-unusual tiny Ocean Pinks.

Another thing, they're going to want to know how far the catches can be hauled; and how long this can take. As the shrimp can't be headed at sea, it appears probable that the business will reverse the trend of recent years in the coastal area, with small operations near the fishing areas instead of central plants at important ports to which fish and shellfish are shipped for packing.

Van Camp Re-opens San Diego Tuna Plant

Van Camp Sea Food Co.'s plant in San Diego resumed operation on January 27. It had been shut down since last November.

Van Camp Pins Honor 3,825 Years' Service

Recognizing 3,825 years of service by 343 employees of its Terminal Island and San Diego, Calif., plants, Van Camp Sea Food Co. last month presented service pins to its senior workers.

Forty-year pins, set with five diamonds each, were given to Gregoria Barcena and Soledad Barcena, sisters, and Mary Flores, all of San Pedro. Jack Kramer of Lomita, Fred Parker of Wilmington and James Cole of Torrance got 35 year diamond pins.

In announcing the award Mr. Kramer, Gilbert C. Van Camp Jr., president of the canning firm, said he started with the firm in 1922 as a laborer, and worked his way up through the ranks to plant operations manager, the position he now holds. Mr. Kramer was not present at the brief ceremony, being in Manta, Ecuador, at the moment, setting up a can-forming line at the Van Camp Manta operation.

In all, Mr. Van Camp presented three 40-year diamond pins, three 35-year diamond pins, four 30-year diamond pins, four 25-year diamond pins, 14 20-year diamond pins, 33 15-year diamond pins, 45 10-year diamond pins and 57 five-year silver pins.

Among the recipients of 20-year pins were Glenn Copeland, executive vice-president; Montgomery Phister, vice-president and corporate secretary; and Clarence Roeland, comptroller.

Californians Gild Gate For N.F.I. Convention

Out San Francisco way they are putting a new coat of gilt on the Golden Gate this month for the National Fisheries Institute convention, which opens there April 19, continuing through the 23rd.

National President of N.F.I. is Aldo Casaretto of Los Angeles, and he is working with the committee headed by Al Levy of Washington Fish Co. of California to make certain that the 13th annual convention will be a lucky one.

Mrs. Lionel Shatz is chairman of the ladies committee and Louis Vitale of Los Angeles Smoking & Curing Co. is in charge of arrangements. Other key men in the committees include Lloyd Turnacliff of Meredith Fish Co., Sacramento; Jack Willis of Crest Importing Co., San Diego; George V. Castagnola of Santa Barbara; Robert Erkins and Budd Thomas.

Arrangements are being made through the national headquarters of NFI for an NFI excursion to Hawaii following the convention.

Twenty Years of service to the Van Camp Sea Food Co. is recognized as Gilbert C. Van Camp Jr., left, awards these officers. Montgomery Phister, vice president and secretary, reaches for his pin, while Glenn H. Copeland, executive vice president, and Clarence J. Roeland, comptroller, wait their turns.

Whitney Equips Salmon Facilities at Anacortes

Whitney & Co. late in February announced plans for rebuilding the dock at its Anacortes station, which was damaged by fire late in the fall, and for equipping it with modern facilities for ice-making and storage, and for servicing fishing boats and handling salmon.

Sam Rubinstein, president of the company, said the firm looks forward to handling more fish than ever at Anacortes as result of its arrangement with the Union Fishermen's Cooperative Packing Co., and also through an agreement with the American Packing Co. for canning a portion of Whitney salmon receipts at its Anacortes cannery.

San Pedro Leads in Food Fish Landings

San Pedro fishermen led the nation in food fish landings in 1957, according to reports published by the U. S. Bureau of Commercial Fisheries.

With a total of 354,000,000 lbs., the Southern California port was comfortably ahead of second-place Gloucester, Mass., where fishermen landed 251,274,000 lbs. San Pedro's catch was valued at $25,440,000 boatside; Gloucester's was worth $7,347,000.

San Diego, landing mostly tuna, unloaded 124,246,000 lbs. with a boatside value of $15,909,000. On the basis of these figures, the San Diego men got the most for their efforts, averaging almost 13c a lb. boatside. At San Pedro, the fishermen collected 7.2c a lb. average, while the best the Gloucestermen could do was 1.3c a lb., average.

"Cy" Collins, Seattle Wholesale Dealer Dies

C. J. Collins, universally known in the salmon canning and wholesale fish business of the Pacific Northwest as "Cy" Collins, died in a Seattle hospital at the end of January after an illness of a few weeks. He was 65, and was president and co-owner of the Dressel-Collins Fish Co., whose cannery and fresh fish plant is located on Pier 67 of the Seattle waterfront.

He had lived in Seattle 42 years, during mostly of which he had been engaged in the fish business.

"Cy" Collins for many years had been an active figure in Puget Sound Salmon Canners, Inc., and was a former president of the Seattle Fish Divoteers. For a number of years he was a member of the Industry Advisory Committee of the International Pacific Salmon Fisheries Commission, representing the canners.

Lowell Wakefield Hurt

Lowell Wakefield, president of Wakefield's Deep Sea Trawlers, Inc., operating the Alaska King crab freezing field, suffered a broken vertebra in his neck this winter when his automobile, waiting for a traffic light, was struck from the rear. He was obliged to wear a massive brace for several weeks.

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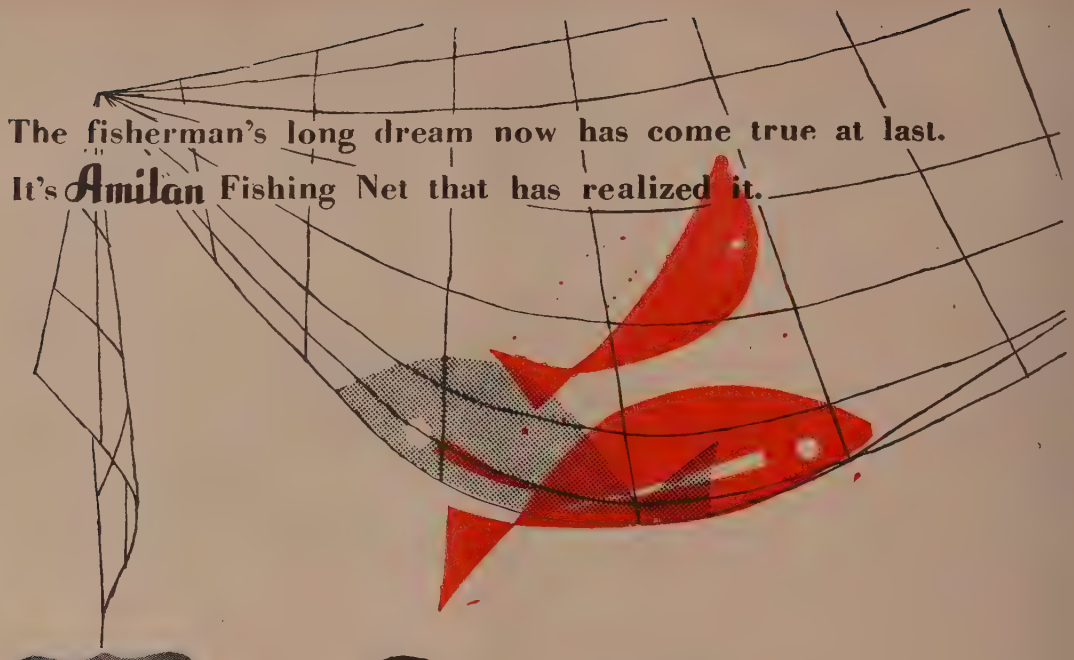

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Antibiotics and Fish Preservation

By LIONEL FARBER and PETER LERKE

● The history of the preservation of fish has followed the course of progress in fishery technology. Thus drying, smoking, curing, pickling as important means of preserving fish have been superseded largely by refrigeration, which has come to the fore within the last three or four decades. With the development and availability of broad-spectrum antibiotics we may be at the beginning of another stage in fish preservation, that of the combination of refrigeration with antibiotics.

The potential beneficial effects of antibiotics for fish preservation became more likely with the discovery of the tetracycline group of antibiotics, comprising chlortetracycline, oxytetracycline and tetracycline. The far greater antibacterial activities of these products enabled the attainment of significant antibacterial effects with very small amounts of material, of the order of 1 to 10 parts per million.

Typical Results

● This laboratory has been working on the efficiency of antibiotics for the preservation of fish in conjunction with refrigeration for about five years. In the course of the studies we have repeatedly observed significant beneficial effects of antibiotic treatments on whole or filleted fish, particularly in conjunction with reduced storage temperatures of 40°F. or lower. Some experiments with fish fillets and whole fish are presented at this time to exemplify the type of results which we have obtained. Figure 1 shows the results of an experiment on sole fillets. The fillets were dipped for 5 minutes either in 5% salt solution for the controls or in 5% salt solution containing 5 parts per million of chlortetracycline.

They were then drained, wrapped in waxed paper and stored at various temperatures. Periodically fillets from each storage condition were removed for organoleptic, chemical and bacteriological examinations. In Figure 1 are shown only the chemical results for the content of *volatile reducing substances* (VRS), which gives a measure of the odor and the condition of the sample, and the organoleptic judgments. The effects of temperature and of the antibiotic treatment on the keeping quality are clearly evident.

Figure 2 shows the results of a test on whole sole on shipboard and ashore. In this experiment sole were placed in either plain ice or in ice containing 10 parts per million of chlortetracycline on the fishing vessel as soon as possible after being landed. After being brought ashore, when they were about 24 hours out of the water, they were then stored in the fish boxes at an outside temperature of 55-60°F. with no further ice and sampled periodically. It can be clearly seen that treating the whole fish on board the fishing vessel with antibiotic-containing ice markedly prolonged their subsequent keeping quality ashore.

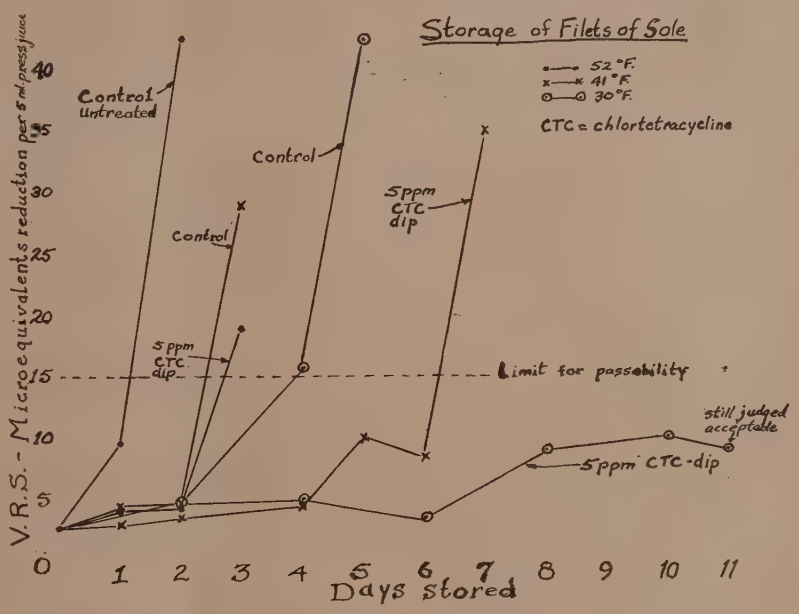

Figure 1. Showing the effect of a 5 minute dip in a solution of 5 ppm of chlortetracycline in 5% sodium chloride on the keeping quality of sole fillets stored at various temperatures.

Discussion

● The data of Figure 1 clearly shows the preservative effect of the chlortetracycline dip, particularly at the lower storage temperatures. This is brought out more clearly in Table 1. The 5 p.p.m. dip in the chlortetracycline solution prolonged the storage times by 1.55, 3.80 and more than 7.1 days beyond those of the control fillets at 52°, 41° and 30°F. respectively. The effect of the antibiotic treatment is greater the lower the storage temperature. Thus, it is obvious that the antibiotic treatment will not eliminate refrigeration but will enhance its effect and supplement its action.

TABLE 1

Showing relationship between storage temperature and preservative effect of antibiotic treatment.

Treatment	Days to reach limit of acceptability at F°		
	52	41	30
None-Control	1.20	2.45	3.9
5 ppm CTC dip for 5 minutes	2.75	6.25	11.0

In the case of the whole fish also, their keeping time is dependent on the storage temperature. An increase in storage time of about two days at atmospheric temperature was obtained

NOTE—The authors are associated with the Fish Research Laboratory, The George Williams Hooper Foundation, University of California, San Francisco.

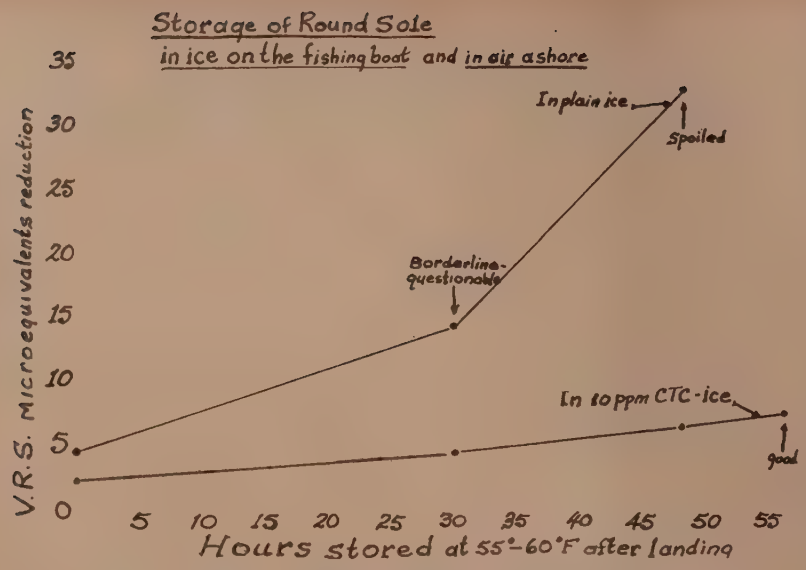

Figure 2. Showing the effect of storage of round sole on a fishing vessel in plain—or CTC-ice on the subsequent keeping quality of the fish after landing during air storage.

from the antibiotic treatment on board the fishing vessel, whereas at a storage time of 40°F or lower significantly longer storage times for the whole fish were obtained. Here again the antibiotic treatment serves to supplement the refrigeration.

When approval for the use of antibiotics of the tetracycline group is given by the Bureau of Food and Drug Inspections of the California Department of Public Health and by the U. S. Food and Drug Administration, the fishing industry should then be in a position to expand its fish marketing activities to ship refrigerated unfrozen fish products into areas which at present only have available frozen fish products. It is possible that an increased fish consumption will occur because of the availability of fish products of improved quality. If the fishing industry will take advantage of the opportunity, a new era in fishery marketing and use may indeed be in the offing.

Summary

- The preservative effects on sole fillets of a 5 p.p.m. dip in a chlortetracycline solution and on whole sole of ice containing 10 p.p.m. of chlortetracycline have been illustrated. The enhancing effects of low temperatures in addition to the antibiotic treatment have also been emphasized.

Desmond and Tarrant On N.C.A. Directorate

A. L. Desmond of F. E. Booth Co., Inc., was elected a director of the National Canners Association at its 1958 convention in Atlantic City. He will serve for three years.

S. G. Tarrant, president of Pacific American Fisheries, Inc., was elected a director to fill the unexpired term of the late E. E. Willkie.

Other Pacific fisheries executives on the boat include Aubin R. Barthold, president, Alaska Packers Association; and Montgomery Phister, vice president, Van Camp Sea Foods, Inc.

Nevadan Making Passes At Control of P.A.F.

LaVere Redfield, a wealthy Nevadan, is reported in financial circles to be making a bid for control of Pacific American Fisheries, Inc., largest American salmon canning company. At presstime he was reliably reported to have accumulated in the vicinity of 30% of the outstanding stock in the corporation.

This is said to be a substantially larger holding than that of any other individual, and Mr. Redfield has informed the corporation management that he expects to seek further participation in its affairs, presumably at the annual meeting in May.

Ben Jauregui Dies

Ben Jauregui, for 25 years Standard Oil Co. marine distributor at Standard's North San Diego Marine Service Station across from the City Hall on the water front, died suddenly last month from a heart attack.

WASHINGTON TRAWL LANDINGS

Year	Sole and Flounders	"Cod"	Lingcod	Sablefish	Rockfish	Miscellaneous	TOTAL	Year
1930	339,932	26,318	.....	.....	24	32,419	398,693	1930
1931	323,064	30,269	.....	.....	.....	3,674	357,007	1931
1932	281,302	46,512	.....	.....	1,000	1,374	330,188	1932
1933	296,517	59,965	.....	.....	.....	5,200	361,682	1933
1934	247,684	25,405	13,454	.....	8,313	6,116	300,972	1934
1935	2,575,998	185,786	285,759	.....	63,284	23,743	3,134,570	1935
1936	4,791,994	406,361	237,229	.....	81,301	22,650	5,539,535	1936
1937	4,265,491	441,130	235,431	.....	72,640	14,919	5,029,611	1937
1938	5,036,852	456,814	286,439	.....	107,163	21,952	5,909,220	1938
1939	4,659,122	354,805	197,982	.....	112,395	231,614	5,555,918	1939
1940	5,917,096	518,705	247,007	.....	248,711	946,788	7,878,307	1940
1941	7,977,576	457,253	199,128	.....	93,286	582,295	9,309,538	1941
1942	9,575,018	1,172,811	3,845,055	118,406	1,034,417	717,279	16,462,986	1942
1943	13,350,936	986,963	4,859,693	778,451	4,464,702	1,015,394	25,366,139	1943
1944	7,806,664	623,151	4,254,298	1,429,682	5,132,233	270,898	19,516,926	1944
1945	9,185,003	2,417,053	4,177,839	529,507	16,093,712	211,068	32,614,182	1945
1946	9,709,656	3,701,647	3,193,436	628,756	10,094,207	93,705	27,421,407	1946
1947	9,294,256	2,442,583	2,481,497	155,981	6,024,582	99,887	20,498,786	1947
1948	13,744,310	5,371,084	4,649,453	314,229	10,262,442	162,166	34,503,684	1948
1949	10,368,493	5,465,538	3,063,672	586,368	12,610,526	588,282	32,682,879	1949
1950	10,379,364	6,330,873	2,365,948	497,822	12,210,430	414,731	32,199,168	1950
1951	11,015,660	8,395,728	1,844,559	1,277,731	9,939,526	2,057,590	34,531,794	1951
1952	12,865,755	9,976,893	1,510,339	643,485	11,288,025	3,375,374	39,659,871	1952
1953	7,890,623	8,183,080	949,757	225,228	6,979,133	4,468,543	28,696,364	1953
1954	12,314,392	15,392,911	1,517,995	335,995	12,857,626	1,593,525	44,011,733	1954
1955	10,238,930	10,549,977	3,097,649	687,745	7,462,759	648,158	32,687,218	1955
1956	13,662,685	9,574,150	2,846,145	3,269,361	10,689,897	7,605,092	47,647,330	1956
1957	11,784,410	10,745,588	2,547,688	506,402	8,019,055	7,324,901	40,928,044	1957

NOTE: - 1957 figures are complete through November 1, 1957, and include estimates for the balance of the year.

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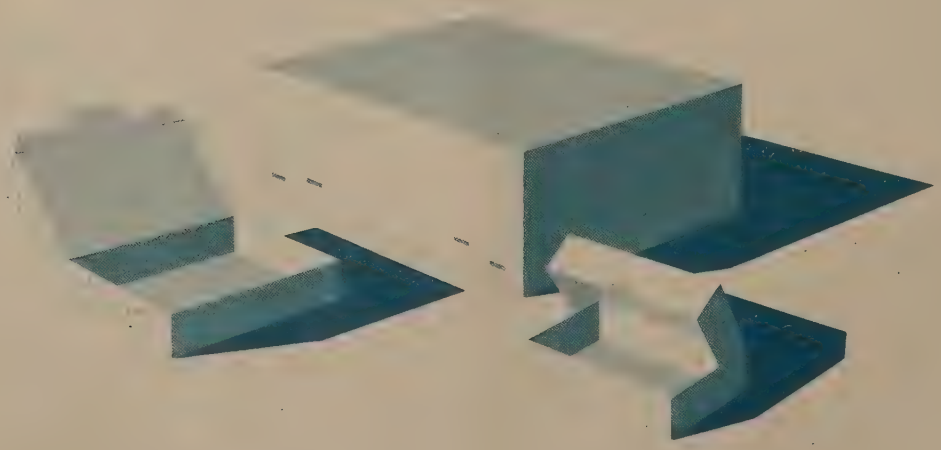


Export of Japanese Canned Salmon, 1956 Pack, by Destination

(Unit, full case of 48 lbs. net. Figures indicate finished shipment plus actual contracts as of August 31, 1957.)

Destination	RED				PINK				CHUM				SILVER				KING	TIDBIT		
	½-lb. Flat	1-lb. Tall	¼-lb. Flat	Total	½-lb. Flat	1-lb. Tall	1-lb. Flat	¼-lb. Flat	Total	½-lb. Flat	1-lb. Tall	¼-lb. Flat	Total	½-lb. Flat	1-lb. Tall	Total	½-lb. Flat	½-lb. Flat & ¼-lb. Flat	Total	(%)
Area "A" (U.S. and Canada)	149,011	10,750	. . .	159,761	60,280	169,921	. . .	700	230,901	. . . .	88,441	. .	88,441	99,000	14,521	113,521	. . .	. . .	592,624	(37%)
Area "B" (United Kingdom)	271,304	7,195	19,285	297,774	39,900	5,731	2,958	3,502	32,091	. . . .	500	. .	500	75,369	1,050	76,419	3,953	. . . .	430,737	(27%)
Area "C" (All other countries)	30,595	14,919	2,692	48,206	263,390	52,362	4,082	35,704	355,538	61,215	67,260	37	128,512	12,075	1,100	13,175	. . .	29,199	574,630	(36%)
TOTAL	450,910	32,854	21,977	505,741	363,570	228,014	7,040	39,906	638,530	61,215	156,201	37	217,453	186,444	16,671	203,115	3,953	29,199	1,597,991	(100%)

Source:- Japan Canned Salmon Sales Co., Ltd.

California Imports of Frozen Fish

Cumulative data in tons for 1958 through Feb. 8, and for other years to the nearest comparable date. Data from U. S. Market News Service.

	Albacore	Skipjack	Yellowfin	Unclassified	Total
San Francisco	111	. .	969	. .	1,080
San Pedro	1,429	342	2,306	. .	4,077
San Diego	215	. .	293	60	568
Total to Feb. 8	**1,755**	**342**	**3,468**	**60**	**5,725**
1957	1,045	2,017	2,812	73	5,947
1956	1,747	1,354	3,775	. .	6,876

Japan's Land Canneries Form Their Own Cartel

Organization of the Japan Land-Pack Canned Salmon Manufacturers Association about the end of January provided a cartel-type organization for 51 firms packing salmon for export in shore plants, located mainly in Hokkaido. Hitherto these canneries have been represented by a cooperative group of their own within the Japan Export Canned Salmon Manufacturers Association, but apparently the cooperative was regarded as something of an "irregular" member, with little voice with regard to the interest of the shore-based operators.

Elected director-in-chief of the new association was Katsusaburo Usui, president of Usui Kansume K.K., long-established packers of sea foods at Nemuro, and president of Hokkaido Canned Food Industry Cooperative Association.

These shore-based packers in 1957 packed about 230,000 cases of canned salmon for export—mostly Pinks.

It is anticipated that they will continue to sell their production through the Japan Canned Salmon Sales Co. and the same trading firms as in the past.

Italians Find Japanese Tuna Landings Excessive

Japanese tuna vessels operating in the Atlantic Ocean numbered 13 at the end of January, and they were landing tuna at a rate which was causing serious concern among Italian buyers.

Four of the Japanese fleet had returned to their home country for the customary "break"; but three other vessels had sailed to join the fleet.

Exceeding earlier estimates substantially, deliveries of Japanese tuna to Italy in 1957 are now reported to have reached 14,000 tons. In addition, there was some fish sold in Brazil, although its amount was small in comparison with the Italian deliveries.

Effect of these heavy deliveries upon the Italian trade is said to have been so severe that the government stirred uneasily and added its voice to the warning of the traders that overproduction would serve to invite restrictions.

Japanese Working On Tuna Finder

Japanese researchers, working under the sponsorship of that nation's Fishery Agency, have developed a new fish finder that can locate such varieties as sea bream, croaker, sharp-toothed eel, flatfish or King crab. The new finder works on the echo-sounder principle, but is much more highly refined than the units now in use by merchant marines and navies.

Wave frequencies as high as 200 kc are used, and the finder is said to be able to spot even a single fish as deep as 600 ft. below the ocean surface.

Japanese scientists are working on a finder than can be used for tuna—a difficult project, because of the speed of tuna and the dispersal of schools.

South Africans Visit San Francisco Factors

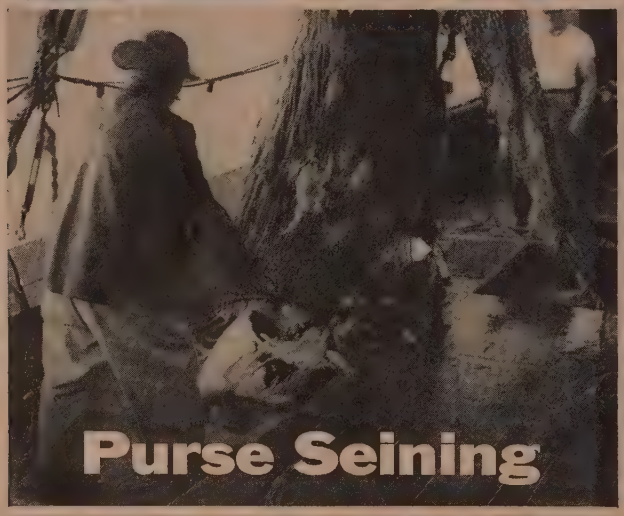
Jack Ovenstone, managing director, and John Newman, plant manager, Walvis Bay Canning Co., Walvis Bay, South Africa, were California visitors last month. They visited various fish packing plants and facilities in the area, and the home office of Wilbur-Ellis Co. in San Francisco. J. R. Townsend, San Francisco fishery consultant, escorted them on a tour of Yosemite Valley and southern California.

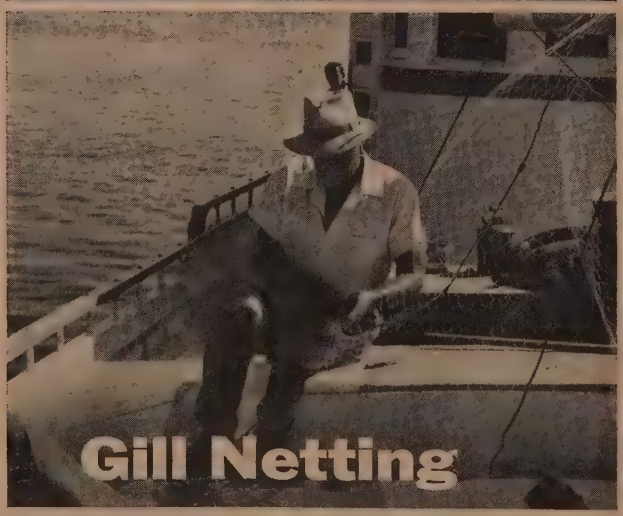
Late Herring Run In Northern B.C.

With most of the industry shut down through inability to meet the fishermen's demand, herring fishing in British Columbia was extremely light until toward the close of the season, when some good fishing was encountered in Northern B.C. by the few boats fishing.

The one plant operating there, the Prince Rupert Fishermen's Cooperative, was reported at presstime to be running to extreme capacity.

In general, Canadian fishery authorities were of the impression that the 1957-8 seasonal abundance was below normal; although admittedly this opinion was based on scant evidence, due to the severe curtailment of operations.





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7-Point Salmon-Saving

California Marine Chief Offers Program to Revitalize Trolling

● A stiff, realistic—and expensive—program to revitalize the King salmon resource of California was laid before the state at Eureka recently by Richard S. Croker, chief of the Marine Resources Branch, Department of Fish and Game.

He was putting the facts plainly to the legislative Assembly's Interim Committee on Fish and Game, meeting in the industrial center of salmon fishing in the northern section of the California coast, where hundreds of vitally interested fishermen and businessmen have manifest distinct concern over the downward trend of abundance in recent seasons.

Faced with an increasingly threatening situation, the Marine Resources Branch has developed a seven-point program, which Mr. Croker told the legislators the Department of Fish and Game is prepared to pursue, providing essential resources of manpower and money are made available.

● The seven points are these:

1. *Continue and strengthen the present program,* specifically with respect to obtaining proper water flow releases, removal of obstructions to salmon migration, construction of fishways, installation of fish screens, artificial propagation of salmon, transplanting fish to build back runs, educational campaign to prevent stream damage due to logging practices, recommendation for protective laws and regulations, enforcements, continual analysis of regulations to obtain better working regulations, inventory of the resource on annual bases, and dissemination and interchange of information.

"Dropping any phase of the present research and action program would be fatal," Mr. Croker said. "The program is already inadequate to provide the needed answers quickly and should be strengthened in virtually every aspect."

2. *Legal authority to implement and expedite the program is needed.* Two changes in the present law are necessary. These are: amendment of present pollution laws to provide for adequate control of harmful waste discharges that are destroying salmon and other fish, and amendment of the basic state law regarding expenditure of any capital funds on property not owned or controlled by the State.

3. *A bold step into undeveloped fields.* New techniques to permit the young fish to survive safely the many sources of mortality must be developed. Saltwater or brackish water rearing should be attempted. Additional experiments should determine the feasibility of developing new runs of fish by planting eyed eggs instead of fingerlings.

4. *Public acquisition and control of spawning areas.* Virtually all of the best spawning riffles are on private property and are subject to exploitation for gravel extraction. The river beds and the water rights, wherever possible, must be acquired for salmon and steelhead.

5. *Reclamation of the San Joaquin River for salmon production.* Legal steps are being taken to obtain water for rebuilding of the San Joaquin salmon resource which has been destroyed by the operation of Friant Dam. If the water is available, the run can be rehabilitated in time. A crash program involving complete management of the river bed will result in 200,000 fish being added to the annual catch.

6. *Trial and development of artificial spawning channels.* The Feather River Project construction plans present a challenging opportunity to develop man-made spawning channels, which, if they are attractive to king salmon, could add 500,000 fish to the annual catch. If successful, artificial channels could be built in other areas, thus further increasing salmon production.

7. *Acquisition and development of entire rivers.* Certain small, strategically located streams should be taken over for management solely as salmon and steelhead production areas. With complete control of the stream bed and water rights, full productive potentials could be realized.

Hatchery Position Firm

● Courageous, positive position was taken by Mr. Croker on the question of hatcheries, so often regarded as the panacea which will offset the effects of water diversions, spawning gravels removal, silting and pollution, over-exploitation and under-escapement.

Only where impoundments block fish from their ancestral spawning grounds should hatcheries be built, Mr. Croker said. He declared a hatchery is at best a poor substitute for natural reproduction and is costly. Salmon management on the Columbia River, a comparable area, was cited by Croker as an example of what costs are involved in an extensive hatchery program. He said the Columbia River program calls for the Federal Government to spend $27,843,000 for construction of facilities and appraisal of their worth. Through June, 1957, a total of $13,751,000 had been committed to the program, which calls for over $18,000,000 in construction alone and another $7,000,000 for stream improvement. Hatchery operations costs alone last year amounted to $872,000. However, in this case, hatcheries are merely replacing spawning areas lost when waters backed up by Federal dams inundated them.

Ft. Bragg Trollers Aid Silver Salmon Program

The Salmon Trollers Marketing Association, Fort Bragg, Calif., has taken an active interest in the program of stocking northern California streams with Silver salmon.

Working with the Department of Fish and Game and with sportsmen's group, the fishermen are supplying labor and materials for building traps, holding pens, etc.

Ray Welsh, former fishermen's union business agent at Fort Bragg, who now has a boat shop there is active in the work, as are the officers of the association: N. A. Miles, *Irene M.*, president; John Thompson, *Nina,* vice-president; Charles Wirtanen, *Betty Arlene,* secretary; Bob Cox, *Delta Pride,* treasurer.

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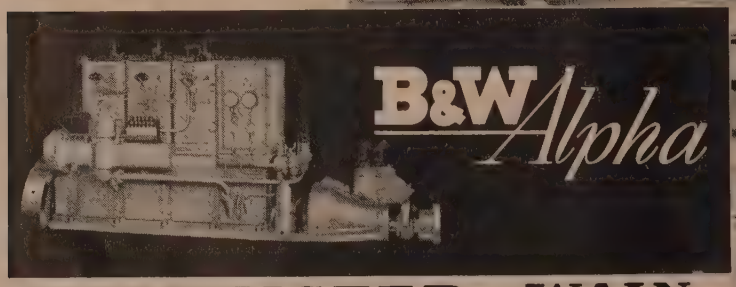

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3 Hatteras Trawlers of new design ply Gulf and Florida waters with Tobin Bronze Shafting

MOREHEAD CITY, N.C., Shipbuilding Corp. is now building two new series of Hatteras Trawlers – one designed for Northern waters—and the other featuring the twin-boom shrimp rig for Southern waters. Excellent examples of the new Southern design are three delivered last Fall to owners in Florida and Texas. All three are equipped with Tobin Bronze Shafting.

TOBIN BRONZE® Shafting has proved itself through its dependable performance on thousands and thousands of pleasure boats, fishing and other commercial craft. It is this record of dependability that has made it first choice of boatbuilders and boatowners.

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The "Tommy T," 63-foot Hatteras twin-rig shrimp trawler delivered to Key West, Fla. Two similar boats, "Billy H" and "Tommy H," were delivered to Brownsville, Texas. All have 3" Tobin Bronze Shafts.

Both Anaconda propeller shafts are available through leading marine supply distributors. For detailed information, see your distributor or write: The American Brass Company, Ansonia Division, Ansonia, Conn. District Sales Offices: Los Angeles, Calif., at 14900 Garfield Ave., Paramount—San Francisco 4, Calif., at 120 Montgomery St.—Seattle 1, Wash., at 902 White-Henry-Stuart Bldg. 58111PF

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PACIFIC FISHERMAN'S NEWS

MARCH 1958

Sardine-Mackerel Price Deal Triggers Intra-Union Trouble

● There was considerable tension last month on the San Diego fishing docks as a dispute broke out between the officers of the Seine and Line Fishermen's Union of San Pedro (AFL-CIO) and a dissident group led by Sam Ciolino, whose election as secretary-business agent of Seine & Line was ignored by the old-line officers.

The dispute resulted in injunctions granted by Los Angeles County Superior Courts to prevent the "regular" faction, headed by secretary-business agent John Scalise, from preventing the dissidents from examining union records. The District Court of Appeals postponed action on the injunctions. Meanwhile, dissident Ciolino was arrested in a "citizens arrest" by Mike Mattera, one of the regular officers, for trespassing when he refused to leave union headquarters after hours.

The trespassing charge against insurgent leader Sam Ciolino was dismissed when Ciolino appeared for trial, Judge Bernard Lawler holding that Mike Mattera, union executive who had made a citizen's arrest of Mr. Ciolino, had failed to show sufficient evidence to convict.

Mr. Ciolino was released, and promptly went with his attorney James Monroe to Mr. Mattera's house to make a citizen's arrest of Mr. Mattera for false arrest. Mr. Mattera, however, refused to leave his house, and San Pedro police, who went along, refused to make an official arrest.

Finally a general union meeting was called by Calise, but dissident members were barred, they said; Calise, on the other hand, said those barred were not in good standing. Although the meeting was closed to dissidents and to the press, reports came out that Calise called for a motion of confidence which was never put to vote.

At this writing, the situation is as chaotic as ever, with action pending on the various motions in court. The original issue seems to have been a series of agreements made by the Seine and Line Fishermen's Union with canneries to accept prices of $55 a ton for sardines, $42.50 for mackerel and $25 for anchovies. These prices were protested by Calise's faction, which claimed price ballots were fraudulently counted by officials. The prices were also considered too low by the ILWU Fishermen's Union Local 33, San Pedro, which picketed canneries in an effort to hold prices of sardines at $80 and mackerel at $55.

* * *

Standard Fisheries, Inc., Fishermen's Wharf, San Francisco, has tripled the capacity of its crab cooking department with the installation of a 15 hp boiler.

Shoreline Diesel Maintenance, Fishermen's Wharf, San Francisco, is expanding into the adjoining quarters vacated by Cal-Marine Radiophone Co. The added space will be used for offices and store room.

8 King Crab Boats to Go Into Bering

American King crab operations to Westward, along the Alaska Peninsula and later into Bering Sea, this year will involve a fleet of at least eight vessels, and perhaps more. This count of course does not include craft engaged in the fishery in the vicinity of Kodiak and Afognak Islands and Cook Inlet; nor the local shore fishery which supports the Pacific American Fisheries' canning operations at King Cove.

The two principal freezing operations working to Westward this season will be the Whitney and Wakefield fleets, the latter of which got away to the north early in February, a full month ahead of the usual departure. It includes the station vessel *Deep Sea,* which is served by the trawlers and pot boats *Foremost, Shelikof* and *Jeannette F.*

Whitney & Co. operations will involve two refrigerated power scows, one live tank and preparation functions and the other for freezing and storage. They will be served by the schooners *Kodiak* and *Mitkof.*

After the early season along the south side of the Peninsula, all of these craft are scheduled to move into Bering Sea to work the grounds off Port Moller.

* * *

The trawler "Mary Ann," Dominic Passanisi, skipper, is dragging for Regal Fish Co., Monterey, out of that port; and the trawler "Friendship," Kenneth Dahl, skipper, is fishing for the same firm out of Morro Bay.

Basking Sharking Starts

The basking shark season began the end of January on Monterey Bay with harpooning of a 5½-ton shark, brought into Moss Landing by Harold Snow and Stan Haskin on the *Snowcrest.* Schools of the creatures arrive in Monterey Bay on the way north early in the year. The whole carcasses are sold to Salinas Tallow Co. Livers are rendered for oil and the remainder for a variety of manufactured products.

5200 Tons of Tuna Sold at Auction

The San Diego tuna auction disposed of 5263 tons of Yellowfin and Skipjack tuna in five auctions held twice weekly from the end of January to mid-February. At the last auction, before press time, prices stood at the highest levels, at $278 straight for Yellowfin and $238 straight for Skipjack, per ton. Fish were also sold at lower base rates, with bonus payments for fish over a specified size.

John J. Silva

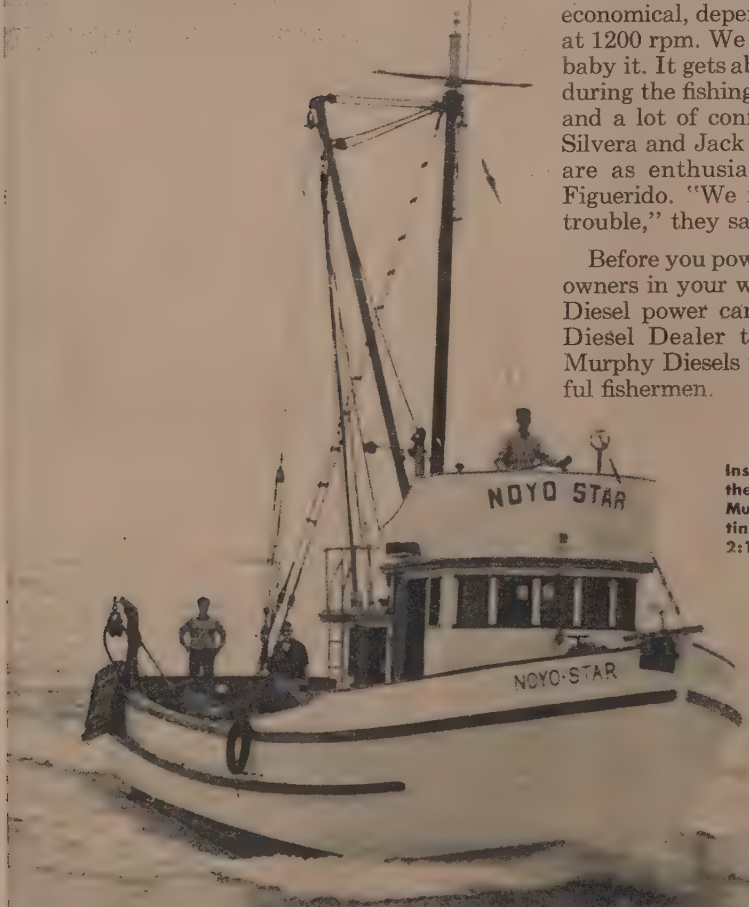
John J. Silva, 63 years old, well-known swordfisherman of San Diego, and for years owner and skipper of the *Mary S,* died last month in San Diego.

Mr. Silva is survived by his widow Mary, five daughters, four sons and numerous grand-children and great-grandchildren. He had lived in San Diego 31 years and was a member of the American Legion and a veteran of World War I.

This MURPHY DIESEL has powered the NOYO STAR for 13 years

"Noyo Star has had the same crew and the same engine for 13 years of busy operation," says Manuel Figuerido, skipper-owner of the successful salmon fisher and drag boat out of Ft. Bragg, California, "and we wouldn't trade our Murphy Diesel for anything. It is economical, dependable, idles well or gives us 10 knots at 1200 rpm. We take care of this engine but we don't baby it. It gets about 300 hours per month of operation during the fishing season, giving us good fuel economy and a lot of confidence about getting back in." Bob Silvera and Jack Kostick, crew members for 13 years, are as enthusiastic about the Murphy Diesel as Figuerido. "We never have any worry about engine trouble," they say.

Before you power or repower your boat, ask Murphy owners in your waters about the advantages Murphy Diesel power can give you. Then ask your Murphy Diesel Dealer to explain the features that make Murphy Diesels top preference with so many successful fishermen.



Installed as original equipment in the Noyo Star 13 years ago, the Murphy Diesel develops 150 continuous hp at 1200 rpm, and uses 2:1 reduction and reverse gears.

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Uniform Fishing Seasons Proposed For Three States

● Uniform ocean fishing season for all Pacific Coast fish save halibut—which is controlled by international agreement with Canada—is being proposed to the Pacific Marine Fisheries Commission by Milo Moore, Washington director of fisheries and Tri-State commissioner for that state.

He is offering draft of a regulation which he is suggesting the Tri-State Commission consider at its next meeting—which presumably will be held in Seattle next November or December. In the meantime, it's something to think about.

As a matter of fact, just such a regulation is something the salmon trollers in particular have been proposing for a long time, and have just now gotten as result of agreement with Canada.

The draft of the Moore proposal specifies salmon, crab, shrimp, cod, herring, pilchard, mackerel, tuna, bottom fish and "other species of fish and shellfish".

It would make it illegal to fish prior to times agreed upon by the three Pacific states.

Further, it would forbid landing in the three states of any fish more than 72 hours after a season closing.

It would forbid a vessel to leave port to fish for any of the species concerned more than 24 hours before opening of a season. Departure of all vessels before a season, or during its first week, would have to be registered and certified.

Finally, it proposes that any fish landed during the first 10 days of a season by boats not having proper certificate of departure, would be subject to confiscation.

Former British Flyer Buys Salmon Troller

The Alaskan salmon troller *Rover* was sold recently at Moss Landing, Calif., to Harvey Kohler of Los Osos by Dick Holloway of Gustine. The 39′ boat has a Chrysler Crown 110-hp. engine, Intervox direction finder, Sur-Echo 50-fathom depth sounder, Wood-Freeman automatic pilot and 2-3 spool Kolstrand gurdies.

Mr. Kohler is a newcomer to commercial fishing ranks. During the war he was a fighter pilot in the R.A.F. shot down in Germany where he was a prisoner of war for 22 months. After several years with a crop dusting operation he got a taste of salt by becoming a boat puller last season. This experience made him determined to have his own boat and the *Rover* filled the bill.

Crabber and Sporter, Joe Nichols' "Halco" Sets a High Standard

● Crabs and sportsmen are vounted as the primary sources of earnings for *Halco*, a sharp 36-footer being finished up early this spring at the Columbia Boat Works, Astoria, for Joe Nichols, Gearhart, Ore., fisherman, who also owns *Lindy Kay*.

Primarily a crabber, *Halco* can earn a share as a party boat week-ends and late in the summer when crabbing is flat and the sport fishermen flush.

She looks a lot like a New England lobsterman with her long deck aft, 22′ of her total length being given over to facilities for handling sports fishermen and crab pots—but not at the same time. She has 12′ beam and is built with Alaska yellow cedar planking, a Port Orford cedar keel and v.g. fir decking.

Matt Tolonen, Columbia Boat Shop owner, thinks the *Halco's* lines and long run will give her a handy turn of speed, while she'll be steady in a sea.

Power is a 671 G.M. diesel, with push-button controls top-side, in the pilot house, and on deck aft. Instrumentation involves radiophone, echo-sounder and loran. Yes, loran is unusual in a 36-footer, but *Halco* is an unusual craft; and loran can be mighty handy when you're hunting for a string of crab pot buoys in thick weather.

Accommodations? She sleeps two; can handle a party of 10 sports fishermen.

Nichols fishes out of Warrenton and delivers to the San Juan Fishing & Packing Co. plant there.

Pacific Fisherman's NEWS

MARCH, 1958 Volume 56 Number 4

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Since he switched to a "Jimmy" Diesel

A General Motors "3-71" Diesel, repowering the 40-foot "Totem," swings the same wheel as the 4-cycle Diesel it replaced, yet the GM engine occupies less space and weighs 600 pounds less.

Says owner Ralph Mortensen: "When you listen on the air, you hear of less trouble with GM Diesels than any other make in the trolling fleet. I particularly like the smooth trolling operation of the '3-71' engine; the old engine fairly shook the boat at salmon-trolling rpm's. Last year, I'd be in the engine room on maintenance when I should have been fishing. I can't afford questionable machinery—that's why I bought the 'Jimmy'."

New 3- and 4-cylinder General Motors "71" Diesels for small boats are available with a choice of hydraulic gears, and with or without heat exchanger. If you'd like more information about these low-cost, 2-cycle Diesels, call your GM Diesel distributor or write us.

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GENERAL MOTORS GOLDEN MILESTONE

GM "3-71" Diesel powers 40-foot salmon troller "Totem" owned by Ralph Mortensen, Gig Harbor, Washington

Halibut Commission—Members of the International Pacific Halibut Commission in session in Seattle. From the left: J. W. Mendenhall, Mattias Madsen, Richard Nelson, Seton H. Thompson, Dr. William M. Sprules and Harold S. Helland. Photo by Morris Southward.

Attraction to Westward—

No-Quota Season, Early and Long, Inducement for Halibut Operation

● Three new courses, representing sharp departures from previous seasons, were laid out for the American and Canadian halibut fleet in 1958 when the International Pacific Halibut Commission wrote the recommendations it is making to the two national governments for control of the fishery this year.

These new courses were:

1. Early opening, April 1, of fishing in the Westward Area 3B, beyond the Shumagin Islands and into Bering Sea; fishing to continue in the area until October 16, with no quota.

2. No second season for the Goose Island and Cape Scott grounds during 7-day no-quota fishing period of late summer in the remainder of Area 2.

3. Opening to fishing for the first time since the original halibut treaty was implemented in 1924 of the so-called "nursery grounds" off Massett at the north end of the Queen Charlottes and off Timbered Islet off the west coast of Prince of Wales Island.

Reasons for these sharp departures in regulation are:

Westward Opening — This action was a frank bid for more fishing on this stock, which the commission has been trying to stimulate for years. It is frankly hoped that the opening more than a month in advance of the general season's opening May 4 will attract a number of vessels into the Westward area, and at a time of year when there will not be attractions to other fisheries. Moreover, the guarantee of late fishing in the fall may serve as a further attraction. Finally, the Area 3B will be without quota during the entire fishing period. All of these considerations are counted upon to attract fishing effort and produce the kind of utilization of far Westward stocks which the commission is anxious to encourage.

Queen Charlotte Closure—Decision not to re-open the Goose Island and Cape Scott grounds for the second season of fishing in Area 2 resulted from the evidence of excessive cropping of the stocks on those grounds during the second seasons in previous years. Thus since the split season program was instituted these areas have come to show a downward trend both in catch-per-skate and in the total catch. Thus in 1958 these two grounds will be closed in the second season to reverse or halt this negative trend.

Nursery Areas Opening—Research fishing on the Massett and Timbered Islet grounds by the Halibut Commission's chartered vessels having revealed a good build-up of large fish, the commission decided to permit fishing to crop this stock of big halibut. Moreover, a year's fishing on these grounds which have been closed for many years is counted to give comprehensive sampling which will show beyond question whether these are still nursery ground, or whether they are simply reserves which have come to be populated by grown-up babies comprising a mature, and perhaps overcrowded, stock.

● One of the remarkable features of the 1957 season, as discussed in the commission's series of meetings late in January, was the heavy production taken from Shelikof Strait, where a large accumulation of fish was found at the first of the season, when the catch per-skate per-set was 240 lbs. This rate of catch declined with the advance of the season to a low of 60 lbs. per skate in September, but the Shelikof Strait all-season average of 150 lbs. was remarkably good. The yield of this area showed a predominance of fish between 8 and 12 years of age.

Sensitive character of the halibut population at the present degree of exploitation is evident in several sections, notably in Area 2, where the 1957 catch-per-skate was lower than in 1956, while the decline appeared somewhat proportional to the increases in annual removals since the split-season plan became effective.

Similarly far to the West the 1957 lower catch-per-skate on the Trinity Islands grounds and those farthe West was taken as reflecting the heav removals from those banks in 195

Seton H. Thompson of St. Petersburg, Florida, was elected chairman of the Halibut Commission for 195 with Dr. William A. Sprules of tawa chosen vice chairman. Sprules is a new member of the co mission, representing the Canadi

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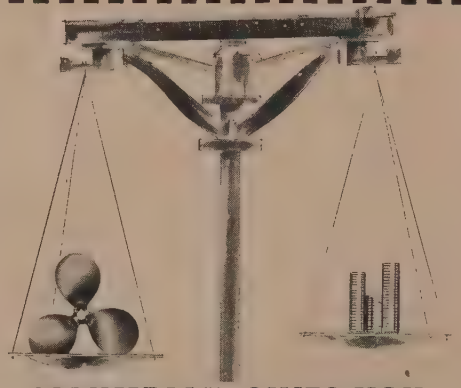

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Halibut Advisors—Several members of the International Halibut Commission's advisory board, pictured in sessions by Morris Southward of the staff. From the left: R. M. Winslow, Leif Tuswik, Barney Roald, Robert Jensen, William Selset, Director H. A. Dunlop, Martin Eriksen (partly obscured), Assistant Director F. H. Bell, Harold A. Sissons, Palmer G. Olson, Knute Thompson.

Ministry of Fisheries and succeeding Samuel V. Ozere.

● With the 1958 regulatory pattern settled, it is to be expected that the halibut fleet will approach the question of its voluntary limit on operations through a between-trip lay-in program.

It was anticipated that the 1957 program, which proved effective in extending the selling season, and perhaps in supporting the price, may be firmed further by increasing the tie-up between trips to a full eight days; and perhaps by revising the rules to provide that lay-ins may not be deferred after announcement of fishing closure date.

"Favorite's" Crew Wins $300 Tuna Tag Prize

For lending valuable aid in research on the movements of schools of tuna —and because they were just plain lucky—crewmen of the tuna clipper *Favorite* last month split up a $300 prize.

In a drawing conducted by the Inter-American Tropical Tuna Commission in San Diego, a tuna tag taken from a fish caught by the *Favorite's* men was picked from among 322 similar tags taken from tagged fish caught since March, 1957.

The purpose of the drawing is to encourage tuna fishermen to look for tags on fish they catch or handle, and turn them in to the tuna commission. The tags reveal to tuna commission experts valuable information on the movements of large populations of tuna.

Manuel Madruga is owner and skipper of the *Favorite*. The drawing was actually made by Dolores Nelson, secretary, and conducted by Dr. M. B. Schaefer, tuna commission director.

Wakefield Fleet Equipped With Modern Safety Rafts

● Modern lifesaving equipment came to the Alaska fisheries when the Wakefield King crab fleet sailed for the Westward grounds in February with British-developed inflatable life rafts for all vessels.

While equipment of this sort has been used in the British fisheries for a number of years, so far as is known this is the first instance of American fishing vessels in the North Pacific being equipped with gear which is coming into recognition as an outstanding contribution to saving life at sea.

Lowell and Howard Wakefield of Wakefield's Deep Sea Trawlers, Inc., studied inflatable life rafts closely for a number of weeks, and then ordered equipment for their four vessels from Lynn Miller of Nordby Supply Co., Seattle.

The rafts decided upon are Elliotts, which are manufactured under Elliott patents and sold by C. J. Hendry Co., San Francisco.

As they went north the *Jeannette F.*, sailing Feb. 3, and the *Foremost* and *Shelikof*, leaving the following day, each was equipped with a six-man "Cutter" model Elliott raft. The big *Deep Sea*, sailing Feb. 7, was equipped with three 10-man "Trawler" rafts.

Howard Wakefield makes the point that the inflatable rafts are not only remarkably effective in an emergency, but they are also handy to have around. They take only a fraction of as much space as a lifeboat of similar capacity, being furnished in a compact package which is opened in an instant by pulling a rip cord. This also sets the inflation process going and readies the raft for sea in a few seconds.

The rafts are much more safely and surely launched than a heavy boat on davits, and provide more protection and comfort than is possible in any lifeboat which a fishing vessel is capable of carrying. The rafts are fitted with a complete canvas cover for shelter and are unsinkable, even if punctured, as they are of compartmented construction.

They are fitted with sea anchor, non-drift bottom, boarding ladder, and appear to provide an effective answer to the problem of providing adequate safety for fishermen in emergency at sea.

Southern California Domestic Tuna Deliveries

Cumulative totals for 1958 through Feb. 8, in tons, as reported by U. S. Market News Service

	Albacore	Bluefin	Skipjack	Yellowfin	Bonito, etc.	Total
Clippers and Albacore Fleet	4	..	5,458	5,841	31	11,334
Purse Seiners	..	41	154	653	3	851
Total 1958 through Feb. 8	..	**41**	**5,612**	**6,494**	**34**	**12,185**
Total 1957	202	65	7,255	6,600	7	14,129
Total 1956	180	1	7,407	10,068	..	17,656

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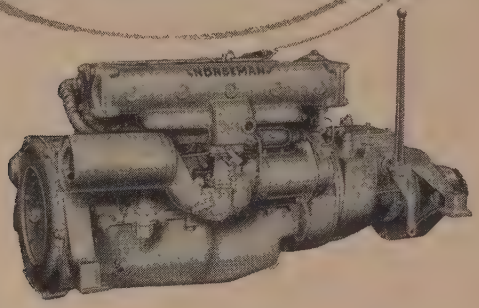

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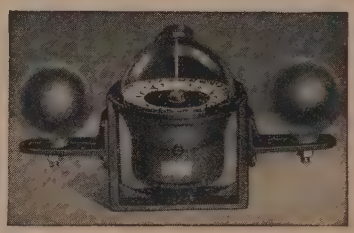

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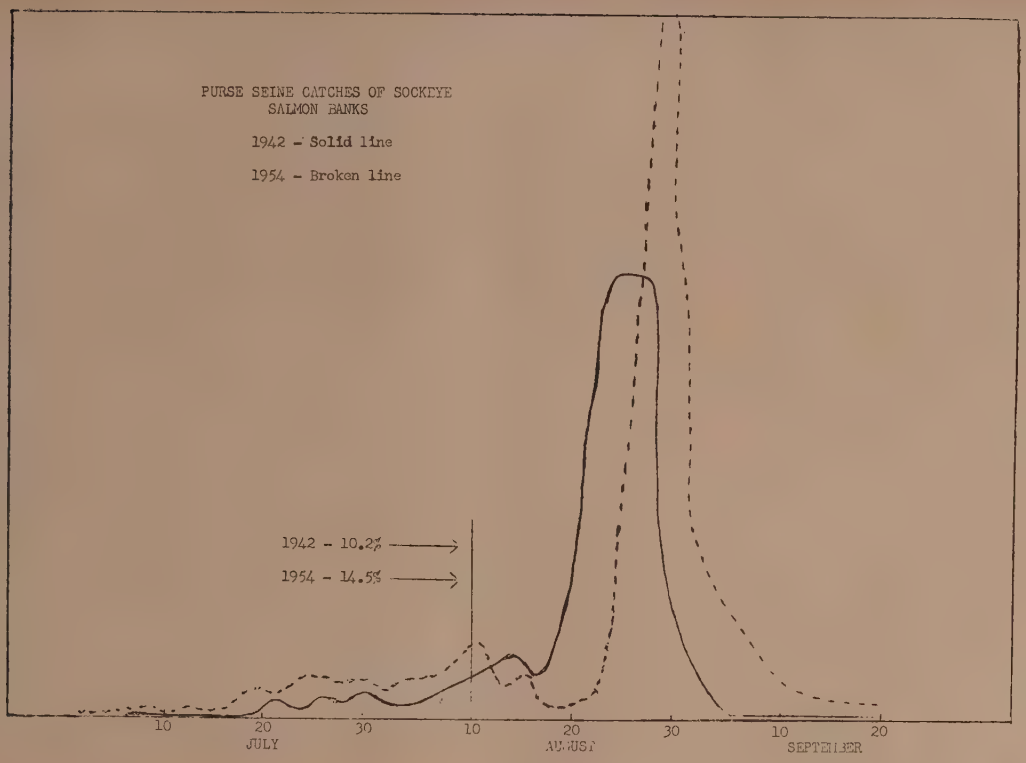


BIG YEAR Fishing

Daring Regulatory Course Chosen For International Sockeye Season

● Big Year Sockeye fishing in the boundary waters of Washington and British Columbia will start late in the coming summer, but will be pursued actively under a daring program by which the International Pacific Salmon Fisheries Commission expects the industry to take a rich catch while it discharges its double duty: 1. escapement adequate to build-up the resource; 2. equal division of the catch between the two national fleets.

Actual regulations will follow closely those proposed by the commission at Seattle in December.

After two months of study, the industry advisory committee reported at Bellingham Feb. 17 general agreement with the regulatory program, with a number of minor suggestions, some of which the commission accepted.

In general, the industry indicated satisfaction with the plan for the 1958 season.

There was no disagreement between the two national groups in any respect; and save for the sharpening competitive spirit between American purse seiners and gillnetters there was general harmony in all quarters.

The Basic Seasons

● Basic principles of the 1958 Sockeye regulations are these:

1. Fishing in waters outside of a line from Port Angeles to Williams Head, near Victoria, closed until August 9 to permit early runs to pass unimpeded through the straits.

2. Canadian gillnetters to take their catch largely from these early runs, when quality is good, and when the escapement from their 3-day weekly fishery will be adequate for seeding the upper tributaries.

3. American fishing starts east of the line noted July 20; and in all U. S. convention waters Aug. 10, three days weekly at first, and then stepping up to five days as the Adams River run develops, closing Sept. 14.

4. Canadian straits fishery west of Williams Head opens Aug. 9 for six days weekly until Sept. 7.

5. Two-day weekly fishing permitted to Canadian gillnetters at and near the mouth of the Fraser until Sept. 14.

Industry Proposals

● Industry proposals advanced by the advisory committee, with commission action indicated in italics, were:

1. Earlier opening in Straits waters than the Aug. 10 date proposed by the commission. *Denied, save as indicated below.*

2. Gillnetters argued strongly for a fishing day of the same length as that for other gear. *Commission decreased hours for reef nets and purse seines to* 16 *by closing the hour from* 8 *to* 9 *at night to these daylight-operating forms of gear. Gillnet hours remained at* 14.

3. Modification of the Point Roberts Triangle closure area in the in-

terest of avoiding unintentional and unavoidable violations as result of wind and current was sought by American advisors generally. *Granted by the commission with the specific understanding that if "blow-back" fish are taken the entire area will be closed.*

4. Canadians requested Saturday closure instead of Sunday in the Straits area. *Granted by the commission, with the result that Canadian fishing in the Straits will start Aug.* 9 *instead of Aug.* 10.

5. Canadian interests operating the Sooke traps sought an arrangement by which these traps could operate prior to Aug. 10. *This was agreed to by the Commission, providing it is authorized by the Canadian Ministry of Fisheries.*

6. American purse seiners sought first fishing position following the weekly closure. *Compromise was offered by the commission, with the purse seiners and reef netters starting first from July* 20 *to Aug.* 10*; and the gillnets first from Aug.* 10 *to Sept.* 14.

New Advisors Named

● The Salmon Commission's industry advisory board was brought up to the full strength authorized by the international treaty, as amended by the Pink Salmon Protocol.

For Canada, H. Stavenes, president of the United Fishermen and Allied Workers' Union became the sixth member of the committee.

B. G. Johnston, manager of the Fishermen's Cooperative Association of Seattle was added to the committee as a representative of the salmon trollers.

Reefnet fishermen, who hitherto have been represented instead of the trollers, were granted full membership on the advisory committee through John Brown, who has been a member for some time.

Joe Erisman of Lopez Island was named American gillnet advisor, succeeding Chester Karlson, who resigned after long service.

In announcing these changes, Senator Thomas Reid, chairman of the commission, paid a warm tribute to Mr. Karlson for his faithful, thoughtful, fair and intelligent service to the commission and to the international enterprise generally through his long years of service.

● Policy of the American section of the commission in the matter of the advisory committee representation appeared to be that reef netting, as a 100-unit producing branch of the industry, should have representation on the same basis as the five classifications specified by the amended treaty —purse seine, gillnet, troll, sport fishing, and processing.

Dangers Foreseen

"Regulation this year is a dangerous gamble," Loyd A. Royal, director of the Sockeye Enterprise, told the industry meeting.

"We *must* have escapement of 1,500,000 effective spawners *on the gravels* and *with the proper timing*. To be sure of getting that, we'll need 2,000,000 salmon above the fishery; for you all know that Adams River fish may turn around and come out into the Gulf again.

"It's a big run, but unpredictable. It may fool around in salt water and then go up-river with a rush; or it may blow-back into salt water and not enter the river again until the Sockeyes are so far advanced toward maturity as to be of doubtful effectiveness as spawners, *if* they ever live to reach the grounds.

"Moreover, the gear concentration on this Big Year will be extreme. Washington has licensed 388 purse seiners and has 68 applications pending, for a probable total of 456 purse seine licenses.

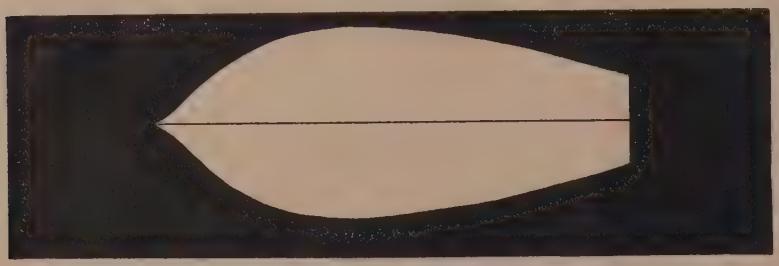
"In gillnets, Washington has issued 819 licenses, with 72 pending, total of 891.

"Period for applications has expired, so these are maximum figures. In fact, the units of gear actually operating will be less than indicated by these counts, as a number of fishermen always apply for licenses to be on the safe side and then do not actually operate.

● Salmon Commission advisory board membership, following the changes announced at Bellingham, is:

Canadian section—R. Nelson, canners; Charles Clarke, purse seine vessel owners; Peter Jenewein, gillnetters; M. W. Black, sportsmen; H. "Bud" North, trollers; H. "Steve" Stavenes, purse seine fishermen.

American section — Joe Erisman, gillnetting; Nick Mladinich, purse seining; John R. Brown, reef netting; H. Gray, sport fishing; B. G. Johnston, trolling; John N. Plancich, processing.



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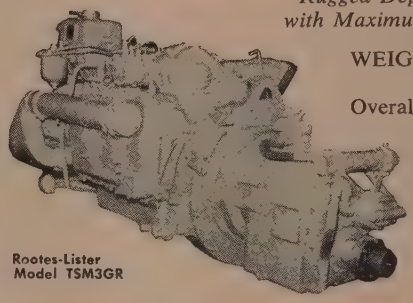

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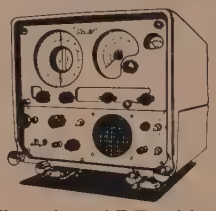

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By PETRALE

Electronic Sensing Units Take Trawl's Temperature

● A "temperature-sensing unit" which can tell a trawler the temperature of water in which his trawl is fishing is being tested aboard the U. S. Bureau of Commercial fisheries exploratory vessel *John N. Cobb,* according to Donald E. Powell, chief of the B. C. F. Exploratory Fish and Gear Development Section stationed at Seattle.

The temperature unit is housed in the same casing as the recently developed "depth telemetering device" is placed just forward of the wing of the trawl. The information as to depth and temperature is relayed via electric conductors shielded within the trawl warp. The device is designed to give continuous pilot house readings as to the temperature of the water at the operational depth of the trawl. The depth telemetering unit has already been tested and found satisfactory in field test is a valuable tool for accurate knowledge as to depth of a midwater trawl and as to the true fishing depth of a bottom trawl. Preliminary test to colaborate and check the temperature sensing unit, which were conducted during the later part of February, were also said to be satisfactory. The temperature data could add considerable information as to the relationship of bottom temperatures and fish destruction. Knowledge of this relationship has proved extremely useful in exploiting some North Atlantic fisheries.

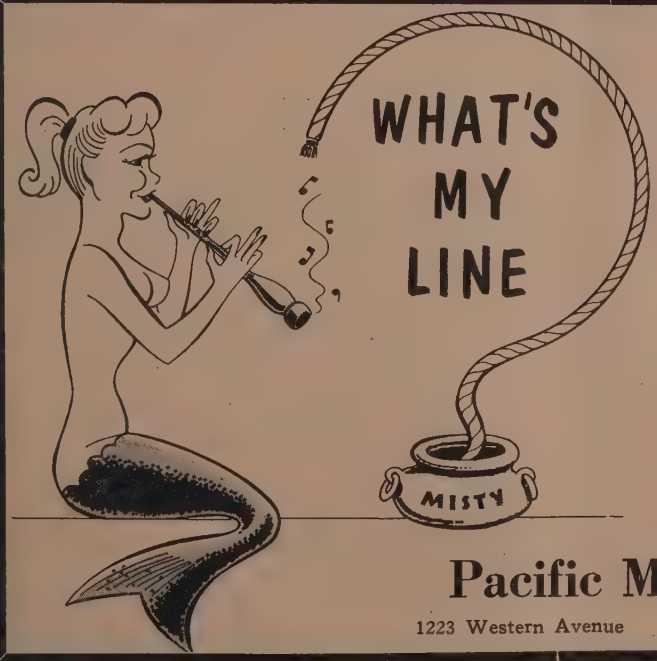
An electronic specialist stationed in the Seattle laboratory of the B. C. F. was instrumental in developing both the telemetering device and the temperature-sensing unit.

Clamp Splices

● The prestige of using steel clamps instead of wire splices has become very prevalent in the European deep sea trawl fishery. The clamps, which are crescent-shaped before being fixed to a wire are secured in place with a hydraulic press. The ends of two wires to be spliced are layed parallel to each other and placed in the crescent shape clamp which is fixed in the press. The pressure is then applied to the hydraulic press and the two wires joined together within the clamp. The frayed ends are then cut off so that the splice is neat and safe. Large trawlers using 1" diameter cable have found the method safe and time-saving. This type of pressure clamp splice is almost unknown in West Coast trawl fisheries, but has recently been used for splices on the U. S. Fish and Wildlife vessel *John N. Cobb,* working out of Seattle.

Cycloidal Propellers

● The German factory trawler *Heinrich Mens* is one of the modern new stern chute vessels working out of Hamburg, Germany. Her owners are rather proud of this new vessel, which not only uses a stern ramp for setting and retrieving her trawl, but utilizes twin cyclodial propellers, which are driven by turbo-charged diesel engine and located far forward. The shafts work vertically. Locating the engine room and propellers forward eliminates the possibility of fowling the net on the propellers or rudder. The fish hold in the 220′ trawler is amid-ships, taking advantage of the widest beam of the vessel. The vessel handles the entire catch below deck and the wheelhouse or bridge is far forward. Additional vessels of this type are said to



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be on order in West Germany.

Underwater Tuna Observations

● The studies of tuna from a plastic cage which is lowered below the water surface while the vessel is carrying out fishing operations is yielding interesting results on the behavior of tuna and bait fish. Observation on bait fish have shown that the anchovy used in Hawaiian waters for bait swims quickly away from the vessel after being released, but scampers back to the cover of the boat when tuna are near. Thus, they tend to lead the tuna to the boat. Another species used for bait, the tilapia, was seen to hover close to the fishing boat after being thrown into the water. This species was not considered as good for bait as the anchovies which attract the tuna close to the vessel. Observers using the cage have reported being able to watch tuna rising from deep-water to take bait. The underwater vertical visibility in Hawaiian waters is reported to be at least 150', while horizontal observations can be made at greater distances. It is hoped the investigation will reveal practical knowledge on the best bait species and how and when to start using bait.

Double Rigged Shrimpers

● A trend towards using double-rigged shrimpers in the Gulf of Mexico fishery appears to be developing. The double rig, known as the "Texas" rig, has produced good fishing results. The double rig shrimper tow two smaller nets instead of one large trawl. In order to accomplish this, the outriggers are lengthened and a large towing block is placed on the end of each outrigger. Many Gulf fishermen feel the double rig produces more shrimp and cuts down the cost of net loss. New shrimpers rigged with the double towing outriggers are now under construction in a number of Gulf ship yards.

Russian Electro Fishing

● Attempts to utilize the principle of "electro-taxis" (attraction of fish towards an anode) for capturing fish in Russia were recently reported successful. An electro-fishing operation was started on the Lavina River, Kamchatka, U.S.S.R. In 175 hours 211,-800 lbs. were caught compared to 144,-800 lbs. taken in the same period by fishermen using traditional nets. The method of fishing consisted of a pump connected to a suction hose. The terminal end of the suction hose was equipped with an anode connected to a high voltage D. C. generator. The fish were pumped from the river into holding tanks where they were kept alive for five or six days. The whole installation needed a supply of 40 to 50 kw. Only 6.5 kw. were needed for the fishing operation.

29th Fishermen's Services at Seattle March 23

The 29th Annual Fishermen's Festival will be sponsored by the Ballard First Lutheran Church, Seattle, on Sunday, March 23 at 3. This is a worship service invoking Divine Blessing and guidance on those who are engaged in the fishing industry, held annually preceding the departure of fishing vessels for northern waters.

Governor Albert D. Rosellini of the State of Washington, Mayor Gordon Clinton of Seattle, and other leaders have been invited to bring personal greetings.

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JERRY'S BOAT SALES: For any type or kind of boat or ship. World-wide contacts. Matt Batinovich, owner and broker. New location: 310 West 7th, San Pedro, Calif. TErminal 3-4482.

COMMERCIAL FISHING BOATS for sale of all sizes, from Salmon Trollers, Combination Albacore Types, Monterey Purse Seiners to Draggers; Many Winter-moored at Moss Landing Harbor and Monterey; Prices from $1,000.00 to $85,000.00. DON WOODWARD, Licensed Broker, MOSS LANDING, California; Telephone CASTROVILLE, NEwton 3-2620; Office at Marine Store, and Standard Oil Fuel Dock, Moss Landing Harbor. (Closed Sundays)

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Matt Simundich Heads San Pedro F.C.A.

Matt Simundich, master of the *Sea Spray*, was elected president of the Fishermen's Co-operative Association of San Pedro, last month. John Zankich of the *Western Monarch* was named vice-president, and John Sima of the *Santa Teresa* was chosen secretary-treasurer.

The new board of directors of the fishermen's association, in addition to the officers, consists of:

Anthony Burich, *Zephyr;* Elmer Duzich, *Seven Seas;* Frank Gargas, *Columbia;* John Grgas, *City of Los Angeles;* Andrew Kuljils, *Courageous;* and Andrew Tipich, *Sea Pride.*

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250-hp Enterprise diesel of M. V. Stanford is kept spotless by chief engineer Kruno Gamulin (above), shown starting engine's priming pumps. RPM DELO Oil is also used in 671 GMC diesel auxiliary which powers reefer units. Reefer capacity is 100 tons of tuna or 140 tons of sardines.

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SYNTHETIC FIBERS

In the World's Fisheries

By
D. L. Alverson

● The large number of papers presented at the Hamburg Congress relevant to net fibers gave evidence to the tremendous impact that synthetics have had on net fisheries throughout the world. There can be no denying a strong trend towards the use of synthetics in fish nets, ropes, and in some line fisheries. One producer of synthetic webbing predicted that within five years 75% of all nets used for fishing will be constructed from synthetic twines.

Natural Fibers

● Natural vegetable fibers such as cotton, hemp, ramie, flax, sisal, manila and jute, which still lead in volume of materials used to construct fishing nets, have one common fault—they are subject to rot. The basic cellulose structures of these fibers are attacked by micro organisms living in water. The fibers are thus weakened and made more subject to abrasion. Rotting of natural fibers has led to the development of a number of preservatives to prolong net life, which have added to the life of natural fiber nets, and also to the cost of net upkeep.

A chemical process to make natural fibers such as cotton, silk and hemp resistant to micro organisms was developed as early as 1926. This process modifies the susceptible cellulose to a cellulose derivative such as cellulose esters. The method causes a chemical change in the structure of the cellulose which renders the fiber resistant to micro organism attack. When acetic acid is used to treat cotton, a product called acetylated cotton is developed. The material has about the same strength and resistance to abrasions as untreated cotton, but is extremely resistant to rot. Similarly, other natural fibers can be treated in this manner. The use of acetylated fibers has probably been restricted by costly processing techniques and resultant high cost of the basic product. The stability of partially acetylated fibers to long immersion in water, however, makes them desirable for use in fishing lines, ropes and fish nets. No preservative or "cutch" treatment is necessary for acetylated fibers. Tests of herring nets made from acetylated cotton are currently being carried out in Germany and Scotland. Preliminary results have been excellent. Acetylated products are sold under a number of names, including "Passivgarn", "Kristallgain", "Cotopa", "Crestol", "Crestive", "Cresti", and "Cestose".

A process for making cotton resistant to micro-organism by a simpler and cheaper means has recently been developed by a Swiss firm, CIBA Limited, of Basle, Switzerland. This technique, called the "Arigal" process, develops a synthetic resin which is deposited in the fiber. The resin, which is fixed by a patented CIBA wet process is insoluble, and the treated fiber is rot-resistant. Net treatment by the Arigal process is still young and its bulk application to commercial fisheries awaits further trial. Its advantages are a relatively low cost, absence of fiber degradation, increased weather resistance of the cotton fiber and durability of the rot proofing itself. A. Ruperti, author of a paper on the Arigal process, feels that cotton treated in this manner offers good prospects in the field of net making and hopes it will help cotton hold its own against the invasion of synthetics.

● Copper preparations, chrome compounds, linseed oil, tars, and various tanning or cutch techniques are still in common use for preserving natural fiber nets. These preservative treatments must be repeated periodically and are a "must" to retard rot and prolong net life. The age-old practice of washing and drying natural fish nets in sunlight also adds considerably to their life. Although nets made of synthetic fibers are not treated against rot, nylon purse seines and other nets constructed of synthetics are, at times, treated with a stiffening agent, such as asphalt base tar, to give the net better handling qualities.

Synthetic Fibers

● The use of synthetic fibers in constructing fishing nets and rope has increased at fantastic rates since the end of World War II. To illustrate the adoption of synthetics into world fisheries, statistics from a few chosen papers are presented below.

According to Professor VonBrandt of Germany, 110,000 lbs. of synthetics were used by Japanese net manufacturers in 1950. In 1955, Japanese net manufacturers used 9,000,000 lbs. of synthetics, an increase of over 80-fold in five years. M. Amano of the Toyo Rayon Co., Ltd., told of the use of nylon (Amilan) nets in the Japanese North Pacific salmon fisheries (see Table 1), which increased from 2,784 yards in 1952 to 3,000,000 yards in 1956. The natural fiber ramie nets used prior to 1953 have been completely replaced by nylon.

Gosta Molen of Sweden reported that "during the last five years practically every professional fisherman has changed over to nylon nets (gill net fishery), and while it is true that the initial cost of these nets is high, this is offset by higher catches and longer life of the gear".

Three English authors, reporting on nets made of synthetic fibers and used on the East coast of Africa (in the shark fisheries), said that synthetic fiber nets were three times as effective as cotton nets. Similarly, nylon nets used in West Africa were reported over four times as efficient as the traditional cotton net.

N. Mugaas of Norway said that nets made of synthetic fibers had proved from two to seven times as efficient in tests with conventional cotton and hemp nets. As a result of these tests, imports in Norway of synthetic materials have risen from 15 to 20 tons in 1954-1955 to 400 tons in 1956-1957. These were but a few of the

---

Mr. Alverson is a biologist and fishery engineer of the Washington Department of Fisheries, who attended the World Fishing Gear Congress in Hamburg, Germany, last fall. This is the third of a series of articles written as result of his observations at the Congress. In succeeding articles Mr. Alverson will discuss (a) Line Fisheries; (b) Fishing with Science; (c) World Fish Production and Trends.

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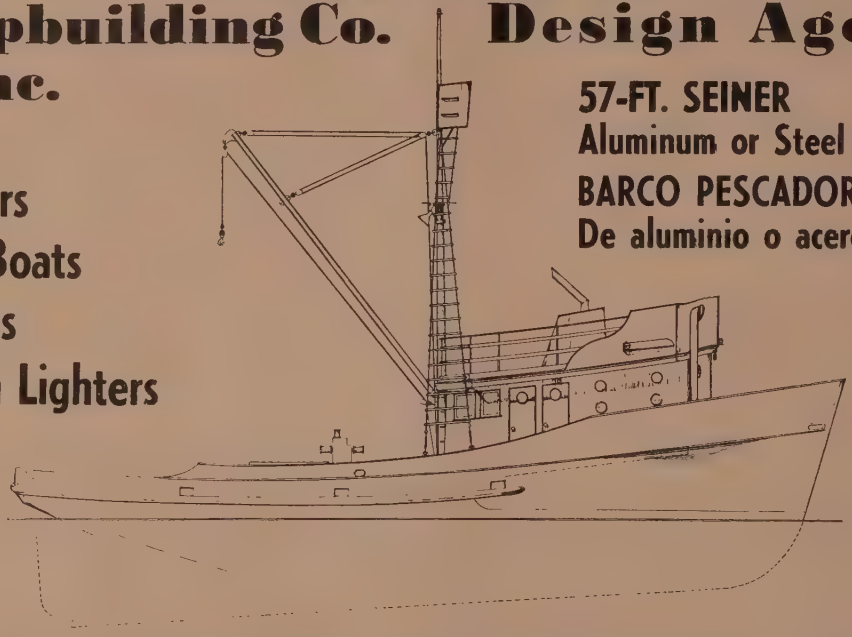

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testimonials showing the impact of synthetics on the world's fishing industries.

● Since the discovery of the process for making nylon by Dr. Carothers in 1938, a number of other synthetic fibers have been introduced. The variety of synthetic fibers that are being marketed, along with a host of brand names used by producers, has complicated and confused the terminology of synthetic fibers. At the Congress, even the professionals in the field seemed confused by the variety of names applied to the synthetics. It must be even more difficult for net salesmen and fishermen to differentiate between the various types of synthetics in order to sell and purchase fibers with particular physical properties. This is further complicated by a number of blend fibers with combinations of natural and synthetic fibers or two synthetic fibers woven together.

It is obvious that all synthetics have certain properties in common, but may vary considerably in their physical properties. Synthetic fibers are made from non-fibrous raw materials and all have a common origin in that they use the same elementary building blocks of carbon, hydrogen, oxygen, nitrogen, and at times sulphur or chlorine. The manner in which these elements are chemically combined determines the nature of the resulting fiber.

In an attempt to assist readers in differentiating the main synthetics now used for net manufacturing, I have abstracted the various papers presented at the Congress, and grouped them into the main chemical types. Below each group, some of the more important characteristics are given.

PURETIC POWER BLOCK

is useful for more than fishing. Here the largest type of this revolutionary item of gear is used for handling a great tuna seine being prepared for fishing at San Pedro, Calif.

Polyamides

● Nylon, perlon and rilsan are the main polyamides used in the fishing industry. Other polyamide fibers being produced include eftrelon, enkalon, furon, kapron, lanon, lilion, nailon, phrilon, phrix perlon, raylon, silon, steelon, supron, trelon and wetrelon. Nylenka; caprolan, grilon, amilan and niplon are all synonyms for nylon. Some of the other polyamides listed above may be only trade names for nylon. Taslan is a nylon which has been treated in a manner (the Taslan process) whereby small loops are developed in the nylon twine which results in better knot-holding quality. Polyamides generally have good tensile strength, wet or dry, and have high abrasion resistance. They are resistant to rot and mildew, but are sensitive to heat and strong sunlight. Because of the detrimental effects of ultra violet light on polyamides, fishermen should not expose nylon nets to strong sunlight for prolonged periods. Set nets or fixed nets which are exposed above the water will not stand up well, especially in semi-tropical or tropical areas. Nets which must be exposed to strong sunlight may fare better when constructed of a dacron-type synthetic which is resistant to sunlight. Both nylon and perlon have a specific gravity of 1.14, while rilson is only slightly heavier than water, (1.00) with a specific gravity of 1.04. Most polyamides have high elasticity and relatively good recovery. Their extensibility, however, is greater than other synthetics such as the polyesters. The moisture absorption of polymides is somewhat less than cotton or hemp, but higher than many synthetic fibers. It should be noted that the strength, abrasion-resistance and other characteristics will vary according to the twine type (for example, staple, filament, tow, etc.) within the polyamide group and other groups of synthetics.

Polyesters

● Dacron, tergal, terylene, diolen and trevira are all polyester fibers used by net and rope manufacturers. Dacron is a Dupont Product, while terylene, tergal, diolen and trevira are all European synthetic fibers. The polyesters have a specific gravity of about 1.38, a high breaking strength, and are resistant to sunlight. They have medium abrasion resistance and have better elastic recoverability (good shape retention or mesh size retention) than nylon-type fibers. Their moisture absorption is very low. Terylene nets are becoming popular in many of the European fisheries, while the use of dacron netting and rope is increasing in the United States.

Polyacrylonitrile

● Orlon is probably the best known (US) synthetic fiber of this group. Dolan, Pan, dralon, redon, creslan (x54), darlan, crylor, colan, fiber D, nitrilon, N. 53, and wolcrylon are other synthetic fibers of this group. They are all resistant to shrinkage, sunlight and mildew. They do not have the high breaking strength of either nylon or dacron type fibers; however,

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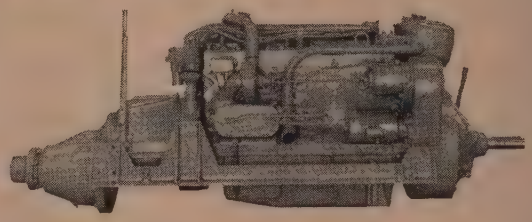

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they have excellent resistance to weathering. These fibers have a specific gravity of about 1.17.

Polyvinylalcohol

● A number of polyvinylalcohol fibers are produced for use in the fishing industries. Those which are best known to the American fishermen are the variety of synthetic fibers being imported into this country from Japan. These include vinylon, kanebian, kuralon (Manryo), newlon and woolon. Cremona and synthofil are European polyvinylalcohol fibers. All of these fibers are low priced products. They have good resistance to weather, but will lose strength after prolonged exposure to sunlight. The specific gravity of polyvinylalcohol fibers is about 1.39 or just slightly heavier than dacron-type fibers. The moisture absorption is comparatively high. Polyvinylalcohol fibers do not possess the strength of either polyesters or polyamide fibers.

Polyethylene

● Fibers of this group include polythene, firestone, reevon, avisco, curlene, and northylen. Teflon is a similar product. Polyethylene is the only synthetic with a specific gravity (.93) less than water. It therefore has been in demand for floating ropes, lifelines and light-weight twine for nets. These fibers have practically no water absorption and dry quickly. Their tensil strength is low compared with other synthetic fibers, however, it is strong enough for use in netting where high specific gravity is not needed. Polyethylene fibers, like nylon, lose strength after long exposure to sunlight.

Polyvinylidene Chloride

● Two fibers in this group which are well known in the fishing industry are saran and kurehalon (Kura halon and Krehalon). Other fibers of this group which are less known include dynel, harlon, veston, tygan, bexan, velon, mills' plastic and permalon. These fibers have a specific gravity of about 1.70 and are heavier than either cotton (1.52) or hemp (1.48). Their moisture absorption is relatively low, being less than nylon or kuralon (manyro).

Polyvinylchloride

● Several Japanese firms are now producing synthetic fibers from this group under the names teviron and envilon. Other fibers in this group include rhovyl, P. C. U., vinyon, bristrand, chlorin, fibrovyl, isovyl, movil, PECE, rhofibre, rhofil and thermovyl. These fibers have a specific gravity of about 1.39, medium strength, good abrasion resistance, and are unaffected by exposure to sunlight. Teviron, which is a new Japanese fiber, is only slightly higher than cotton in price.

Catch and Net Use by Japanese North Pacific Salmon Fleet

Year	Number of Fleets	Number of Ships	Total Catch (in 1000's)	Catch per Ship	No. of Amilan Nets Used	No. of Ramie Nets Used
1952	3	57	2,100	37	2,784	127,200
1953	3	115	7,700	73	174,000	124,800
1954	9	210	20,500	100	780,000	0
1955	14	405	64,040	163	2,040,000	0
1956	16	506	52,000	103	3,000,000	0

Blended Fibers

● The synthetic groups listed above cover most of the fibers now used in the fishing industries. There are, however, a number of blend products which are produced by combining synthetic fibers or combining a synthetic with a regenerated cellulose fiber, usually acetate. The combinations of fibers and percentage of each used gives considerable latitude as to the number of blend possibilities. Blends can be "tailored" to produce a twine with characteristics intermediate between the original fibers used. By using a relatively low cost fiber combined with nylon, a twine is produced which is less costly and with more bulk than a pure nylon twine. The new twine, however has considerable more strength than the cheaper fiber.

Fishermen who must pull nets by hand find greater comfort and ease of handling when working a twine with more bulk than some of the pure synthetics. Combinations of synthetics may be also used to obtain desired sinking characteristics, strength and other properties by blending percentages of fibers with the particular attributes desired.

Choice of Twine

● In the matter of a choice of a synthetic fiber for various fishing gear, I have had little personal experience and must rely on advice given by Dr. Klust of Hamburg, Germany. Most of his information is based on Germany fisheries; however, it is probably applicable to many of the world's net fisheries.

Dr. Klust suggests that set nets (e.g. set gill nets) floating gill nets and trammel nets for inland fisheries and fine-herring nets (not those of the larger drifter fishery) use fibers which are strong and yet have a small diameter. Both polyamide type fibers and polyester fibers have high strength and would be satisfactory for these nets. Polyamide monofile, which is nearly invisible in water, is considered excellent for fine gill nets.

For larger ocean-drift nets, such as are used in the herring fisheries of Europe, either the polyamide or polyester fibers would be satisfactory. If increased cost for synthetics in this fishery does not fully justify their use, polyvinylalcohol fibers are suggested as an alternative. These are only slightly more expensive than cotton. If a polyvinylalcohol fiber is used, it should be stiffened by treatment. Manryo nets have been successful for this type gear.

For seines and purse seines where high absolute breaking strength of the twine (in knotted and wet state) is not essential, the polyvinylalcohol twines are again considered satisfactory and have the advantage of not being expensive. If high breaking strength (wet and knotted) is necessary, e.g., as in the tuna fisheries, then either polyamide or polyester twines are suggested.

For large trawl nets where breaking strength, abrasion resistance and elasticity are desired, along with reduced weight, the polyamides are preferred. The polyesters would also be satisfactory. This is also true for herring, bottom and mid-water trawls. The use of nylon or perlon filament fiber, cod ends, which have excellent abrasion resistance and high strength, are currently being used in Europe and in some American trawl fisheries. Trawls constructed of polyvinylalcohol twines are frequently being used in Japan. Their advantage appears to be due to low cost and rot-proofness. Nets of this type would probably be satisfactory for light gear used in our Pacific Coast trawl fisheries and for shrimp trawls. In areas where loss of gear is high due to snags, I would not recommend the use of expensive synthetic twine nets. The cost of replacing the gear would more than offset advantages gained. This might also be applied to any fishery where high net losses are due to other than inherent twine faults.

Handling Nets

● The development of techniques and new methods for handling nets throughout the world does not seem to have kept abreast of the progress being made in boat design, net materials and fishing excessories. To quote from Peter G. Schmidts' paper on the Puretic Power Block, "Historically fishermen have hand hauled fish nets out of the water onto their fishing vessels. Nearly all phases of fish-

If only 85 or 90% of its potential power is being converted into effective thrust, as is frequently true, in the case of a $10,000 engine, you've got a $1500 to $1000 investment on the shelf that's not producing ONE CENT of revenue for you . . . practically twice as much as the cost of a matching MICHIGAN STAR 5-blade wheel . . . a prop that in addition to assuring MAXIMUM thrust, gives MORE SPEED at normal cruising RPM, more power for dragging, a total absence of stern vibration and has approximately three times the lasting qualities of ordinary bronze wheels. Let our propulsion engineers recommend the wheel that is ideally suited to your particular engine and hull. See your Michigan dealer or write to us for a FREE PROPELLER ANALYSIS form. We make absolutely no charge for this service though it has paid tremendous dividends for thousands of owners. Why not drop us a card, right NOW!

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We say this about shrimp rope just as easily as we say it about trawling and purse seine rope. They all come under the heading of Roebling Special Galvanized Fishing Rope, and everything we say about it is *true*. Your distributor will show you and so will we: Wire Rope Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities
Subsidiary of The Colorado Fuel and Iron Corporation

Latest Type Japanese Tunaman—No. 5 Koyu Maru, the mid-type, high-speed tuna fishing craft which is supplanting the long-line giants in recent construction. With gross tonnage of 235, the steel vessel is 118′ in length, 22′ in beam and 11′ deep, with capacity for 150 tons of fish and a cruising speed of 13 knots loaded.

ing procedures have been improved through mechanization; however, fishermen for generations have accepted the fact that large fish nets must necessarily be hauled from the sea by brute strength". This fact still exists today in many large seine and drift net fisheries. The need for reduced cost and higher monetary return per man led, during recent years (in the Pacific Northwest), to the development of the power roller on small seine vessels and the strapping method on larger purse seiners. In 1951, Nicholas Kelly of Nananimo, B. C. introduced the drum and level wind device for handling a purse seine. Mario Puretic, an experienced tuna fisherman, introduced the basic idea of passing the net through an elevated, free swinging, self-powered, V-sheave in 1953. The block was introduced into the Pacific Northwest in the spring of 1955 and since that time over 1,000 seiners have adopted this method. The development of the Puretic Block, has undoubtedly been the most striking and radical change to occur in the mechanization of net fishing in recent years. It has two highly desirable features:

(1) it reduces requirements for man power, and

(2) it relieves the crew of a considerable amount of physical exertion. The impact of the Puretic Block system of hauling nets may ultimately have as strong an impact on world net fisheries as the introduction of synthetic fibers. The interest at the Congress for this gear was obvious and the device is rapidly spreading to all parts of the world. Peter Schmidt, President of the Marine Construction and Design Co. (builders of the Puretic Block), feels that modification of the present power-block system can be adopted for any major net fishery of the world. Personally, I am inclined to agree.

For further information on physical characteristics of synthetic fibers and on the Puretic Block, the following references are given: (1) Man-made fibers, by R. Arzano; (2) The Efficiency of Synthetic Fibers in Fishing, Especially in Germany, by Dr. G. Klust; (3) The Physical Properties of Netting and Twine Suitable for Use in Commercial Fishing Gear, by P. J. G. Carrothers; (4) Terminology and Count of Synthetic Fibers, by Hans Stutz; (5) The Puretic Power Block, by Peter G. Schmidt, Jr.

Parties interested in obtaining copies of these papers should write to Food and Agriculture Organizations of the United Nations, Fisheries Division, Rome, Italy.

Leaky Exhaust Fumes Kill "Kinky" Lannen

H. J. "Kinky" Lannen, 55, of Cordova, Alaska, was asphyxiated early in December by fumes from a leaky exhaust pipe aboard his boat *Amigo* in which he and his partner, Joe Forrester, were fishing King crabs on Prince William Sound. Forrester was also overcome, but revived.

Lannen had been an active figure in Cordova area fishing, union affairs and politics, having sought election as territorial labor commissioner in 1954.

To Drag Stingrays

Coast Oyster Co. recently received permission from the California Fish and Game Commission to drag for stingrays in Humboldt Bay, where it has the largest oyster beds in California. This method of control of the rays, which are serious oyster predators, has proven successful in previous years and the commission specified that the same type of drag gear be used as in the past.

The PAK-SHAPER

PREFERRED BY LEADING TUNA CANNERS!

Introduction of the PAK-SHAPER in 1949 developed in tuna canning a greater mechanization than had come about in 30 years of previous growth. Subsequent experience has proved its value to the industry. A large percentage of major tuna operators now employ the PAK-SHAPER.

The PAK-FORMER, designed exclusively for Chunk and Grated Style Pack, is now available to the tuna industry under similar terms as the PAK-SHAPER.

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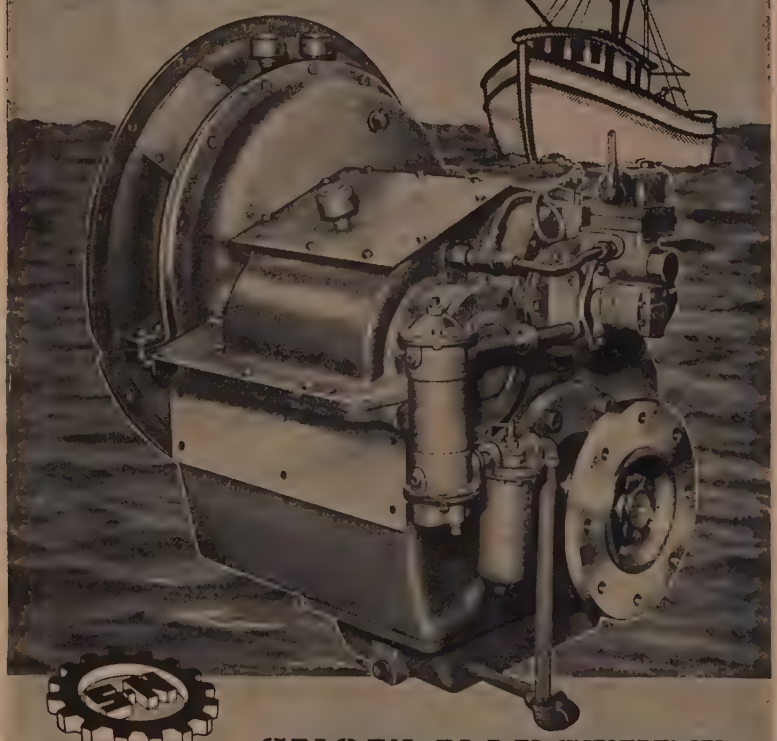

SNOW-NABSTEDT

Transmission Engineers FOR OVER HALF A CENTURY

Rival Fishermen's Unions in Court

The continuing rivalry between the Seine and Line Fishermen's Union of San Pedro and Local 33 ILWU Fishermen's Union caught a cannery in the middle last month. As a result, lawyers for both sides went to court.

First a restraining order was granted the cannery against the union, restraining the union from picketing the cannery in a dispute over unloading the tuna boat *Sandy Boy*. The union in return sued in the District Court of Appeals, Los Angeles, for a writ of prohibition to void the restraining order, thus allowing the pickets to continue picketing.

The union's lawyer argued that when interstate commerce is involved, jurisdiction lies not with state courts but with the National Labor Relations Board. The cannery attorney, however, held that in this case there was no labor dispute as between the cannery and any union, but solely a quarrel between rival unions.

Appellate Judge W. Turney Fox took the case under submission.

Meanwhile, in San Pedro, the ILWU local signed an agreement with the National Labor Relations Board not to picket "restrain or coerce" crew members of several boats which had been picketed by the ILWU. The pickets were thrown around the boats because of price agreements made by the skippers which the ILWU local protested.

L. R. Glosten Opens Boat Design Office

L. R. Glosten, consulting naval architect and marine engineer, this spring established his headquarters at 71 Columbia Street, Seattle 4, in the same building as *Pacific Fisherman*.

A graduate of Webb Institute of Naval Architecture, he has been affiliated for some years with the naval design firm of Philip F. Spaulding and Associates, Seattle.

Third 72-Footer Completed in Canada

A 72' combination halibut boat and salmon seiner was launched recently by Matsumoto Shipyard, Dollarton, B. C., for Haugan brothers, fishing for Prince Rupert Fishermen's Cooperative Association.

The same yard recently completed two similar vessels named *Ocean Star* and *Blue Ocean*. The new vessel, powered by a British-built Ruston-Taxman 333-hp. engine, is named *Sunniford*. It is designed for heavy duty in northern waters.

FOOD FISH MARKETING

News and Views of National Trade in Fish and Shellfish

Section of PACIFIC FISHERMAN-- March, 1958

Lenten Salmon Promotion Gives Leverage to Sales

● Lenten movement of canned salmon from the primary market was light — which is normal where good selling has been done and the consuming centers well supplied as result of prudent ordering.

The stuff must be consumed, however; and that's where the canned salmon promotion campaign went to work as Lent offered the year's best opportunity.

The American Can Co. opened the promotion with its 150-station CBS "Doug Edwards and the News" TV program.

The Canco television show accented the variety of delicious recipe possibilities presented by the "silver from the sea." These included a novel variation of a cheese dish called "salmon rarebit," a fish chowder made with canned salmon, potato salad sparked with chilled salmon and a Lazy Susan stacked with salmon salad, loaf and sandwich filling.

The program also depicted the role of cans as the economical link between the sea and the dinner table.

Food page publicity went out before Lent to 1,588 daily newspapers and 9,500 weeklies. "American Home" and "McCall's" advertising had solid impact; and the field brokers throughout the country helped a lot.

The promotion began in Lent, but it is to last for years, with cumulative effect.

● Mid-February sales reports from substantial factors in the primary market showed interesting movement.

Canadian Pinks were available to meet the shortage of domestic production and other imports, being generally priced 40 to 60c per case under the $23 domestic Pink quote.

With Chums at $18, a full fiver below prime Pinks, there was material movement. This pricing let Chums wear a 49c retail tag, which helped volume.

Advertised brands of Red talls generally have been made available at a strictly competitive $33 price as a Lenten special, serving to reduce still further the really light first-hand stocks of this standard item.

Alaska Red talls packed from frozen fish at presstime were being offered at $29, the $4 differential under this grade packed from fresh fish being an unusual spread, as was the $3 difference between the frozen Red halves at $18 and the standard-pack item at $21.

U. S. Production of Fish Sticks, 1953-1957

Month	1957 1,000 pounds	1956 1,000 pounds	1955 1,000 pounds	1954 1,000 pounds	1953 1,000 pounds
January	4,267	4,862	5,345	2,771	115
February	5,279	5,323	5,794	3,180	133
March	5,140	6,082	7,205	4,003	148
April	4,503	3,771	5,953	3,841	35
May	3,372	3,873	4,879	3,941	22
June	3,540	3,580	5,392	4,381	31
July	3,772	3,153	4,340	3,810	417
August	4,623	4,166	4,520	4,364	454
September	4,899	4,085	4,535	4,272	809
October	....	5,063	5,261	5,637	1,435
November	....	4,585	4,946	4,803	1,902
December	....	4,019	4,876	4,959	2,001
Total	*39,393	52,562	63,046	49,962	7,502

*Nine months total.

Pacific Northwest Market

Market prices currently quoted at presstime by Pacific Northwest brokers and cannery sales department, cases of 48 tins, unless otherwise specified, good quality, as reported by the U. S. Bureau of Commercial Fisheries, Market News Service:

Items and Packages	Per Case
Puget Sound	
Sockeye, halves	$23
Sockeye, quarters	13
Alaska	
Red, talls	33 -34
Red, halves	21 -22
Pink, talls	23
Pink, halves	13 -13.50
Pink, 4-lb. (12)	24
Coho, talls	26 -27
Coho, halves	15 -16
Coho, quarters	9.50
Coho, 4-lb. (12)	26.50-28
Chum, summer, tall	18
Chum, fall, tall	16.50-17
Chum, summer, halves	11 -11.50
Chum, fall, halves	10.50
Chum, 4-lb. (12)	19 -20
King, talls	28.50-29
Columbia River	
Chinook, ½ oval (12)	14 -14.25
Fancy, halves	24 -26
Fancy, quarters	13 -14.50
Choice, halves	17 -17.50
Choice, quarters	10 10.25
Silver, halves	16 -17
Silver, quarters	9.00-10.25
Tuna, Northwest Pack—	
Albacore, fcy., 7 oz.	11.50-12
Yellowfin, chunk, 6 oz.	9 - 9.25
Yellowfin, chunk, 6½ oz.	9.25- 9.75
Tuna, Featured Pack—	
Albacore, fcy., 7 oz.	14.85-15.25
Albacore, fcy., 3½ oz.	8.50- 9.15
Albacore, chunk, 6½ oz.	10.50-13
Albacore, chunk, 3 oz.	6.50- 8
Lightmeat, fcy., 7 oz.	13.75
Lightmeat, fcy., 3½ oz.	8.45
Lightmeat, chunk, 6½ oz.	12.00
Lightmeat, chunk, 3 oz.	7.40
Canned Crab—	
Dungeness, 24, 6½ oz.	9.50-10
King, 24, 7½ oz., fcy.	29.00
King, 24, 1s, fcy.	26.50
King, 24, 7½ oz., fcy.	14.60
Northwest Shrimp—	
Wet Pack, 24, 4½ oz.	7.50

Alaska Labor Negotiations Forecast Increased Costs

With the national trend toward wage increases emphasized in early negotiations looking toward contracts for salmon canning in Alaska during 1958, it was apparent to thoughtful canners at presstime that labor costs were likely to advance.

At time of writing no contracts had been concluded, nor closely approached, but project was normal and at that time nothing had arisen to indicate stalemate, providing always that there was no abandonment of realistic attitude.

Oct. 6-12 Fixed For National Fish Parade

National Fish Parade and Fish Week next fall will be October 6 to 12, it was decided in January, a full 10 months ahead, by the committee headed by F. M. Bundy of Gorton's of Gloucester.

Whitney Gets Exclusive On "Gillnetters Best"

● Union Fishermen's Cooperative Packing Co. of Astoria, Ore., and Whitney & Co., Seattle, announced late in February the consummation of a long-term agreement whereby a portion of the Puget Sound production of Whitney & Co. will be canned at the Union Fishermen's cannery at Astoria.

Further, Whitney & Co. is granted exclusive right to use the Union Fisherman's Cooperative Packing Company's famous *Gillnetters Best* trade mark in all of the United States except the State of Oregon.

Union Fishermen's Cooperative Packing Co. is one of the famous old firms in the salmon canning business. It was founded in 1896 and for more than 60 years has built its *Gillnetters Best* brand as one of the quality labels in the business.

The plant as Astoria is maintained always in the best of condition and equipment and presently is managed by Rolf Ostrem, with C. O. Moberg, president of the company, exercising much personal interest and supervision in its affairs.

Despite its name, the Union Fisherman's Cooperative Packing Co. is neither a cooperative nor a union affiliate, but is and always has been an actual corporation, although at the time of its organization in 1896 all of its stockholders were active fishermen.

In addition to its salmon cannery and auxiliary refrigeration facilities, the company plant at Astoria embodies a modern tuna cannery.

● Whitney & Co., of which Sam Rubinstein is president, ranks among the larger factories in American salmon selling, with substantial production of its own through canneries at Seldovia and Wrangell, Alaska. The cannery facilities at its Puget Sound station at Anacortes, Wash., were destroyed by fire several months ago. Its headquarters office is at 1455 Northlake Place, Seattle.

10c Price Demand Stops Crab Fishing

A 2-cent hoist in crab price demand along the Oregon and Washington coast put a stop to fishing just after the middle of February all the way from Newport to Cape Flattery.

The fishermen had been getting 8c and wanted 10. The packers said they couldn't pay it under existing supply and demand. Fishing stopped, and at presstime of this issue was still stalemated.

Up to the stoppage fishing had been fairly good, particularly on the Central Oregon coast. Some packers reported themselves ahead. Others thought the catch-per-pot was down a bit from the two previous years—both of which were very good.

The crabs themselves were fine, exceptionally heavy, clean and in fine condition. Interest in crab canning was no more than moderate, and most packers seemed to favor picking the meat for vacuum packing fresh or frozen in No. 10 cans; or for freezing after the new, and *hot*, eviscerated method.

Washington's 1957 Oyster Production Drops Off

Washington state oyster production dipped slightly in 1957, with an aggregate of 9,959,872 lbs., against 10,609,798 in 1956, according to Washington Department of Fisheries data.

Olympia oyster production was the lowest ever recorded in the state—16,279 pounds in 1957. Only bright spot for Olympias was the apparent increase in production which began in November, 1957, and is continuing into 1958. Summer set of Pacifics in 1957 was also good, with oystermen hopeful that this is an indication of better production in the future.

Production of the three species by area in 1957 was as follows:

	1957
Pacific Oysters	
Puget Sound	3,349,053 lbs.
Grays Harbor	842,932 lbs.
Willapa Harbor	5,746,001 lbs.
Kuamoto Oysters	
Puget Sound	2,522 lbs.
Grays Harbor	2,525 lbs.
Willapa Harbor	560 lbs.
Olympias	16,279 lbs.
Totals	9,959,872 lbs.

1958 Salmon Cutting Scheduled for Mar. 18

The annual Canned Salmon Cutting sponsored by the Northwest Branch of the National Canners Association will be held at the Olympic Hotel, Seattle, March 18.

As in past years, the cutting will include the opening and critical examination of several hundred cans of salmon of the 1957 pack. This phase will occupy the entire morning of March 18, with teams of judges scrutinizing the pack early in the day, followed by public examination later.

In the afternoon meeting the judges will report upon their examination and appraisal of the pack from the standpoint of comparative quality.

The following morning, March 19, the annual Salmon Research Conference will be held in the Olympic Bowl, with a report of scientific investigations conducted by the Fisheries Research Institute of the University of Washington.

Vito Manages Sales For Dooms' Firm

Wm. O. Dooms, Wm. O. Dooms Co., Oakland, California sea food brokers, has announced the association with his firm of Phil Vito as sales manager, frozen packaged foods.

Prior to his connection with the Dooms organization Mr. Vito was northern zone manager for "Grand" Duchess frozen meats.

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MOUNTAIN RAINBOW TROUT
Looks and tastes like Fresh Caught Rainbow Trout
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Robert L. Stix, Inc., 260 West Broadway, N. Y. 13

Southern California Receipts

	Albacore	Bluefin	Skipjack	Yellowfin	Bonito, etc.	Total
San Pedro	1,432	41	3,408	6,074	5	10,960
San Diego	216		2,546	3,018	30	5,870
Total 1958 through Feb. 8	**1,648**	**41**	**5,954**	**9,092**	**35**	**16,830**
Total 1957	556	65	9,272	9,182	7	19,155
Total 1956	1,727	..	8,761	12,874	2	23,364

Britain Talks 1958 Fish Trade With Japan

Negotiations between Japanese and British trade delegations opened in London in February to discuss renewal of the existing agreement which expires on March 31, 1958. Informed observers predict that little change will be made in the existing agreement.

The Japanese are hopeful of increasing their imports to Britain to about U. S. $89.6 million. The Japanese canned fish industry is exerting pressure on their trade delegation to increase the canned fish quota to U. S. $21 million, up about U. S. $7 million from the current figure.

Kreielsheimer at Helm Of Salmon Promotion

Chairman of the current canned salmon promotion campaign is Leo T. Kreielsheimer, president of the Kadiak Fisheries Co. and Chignik Fisheries Co., Exchange Building, Seattle 4, Wash.

L. A. Petersen, sales manager, New England Fish Co., who has been chairman of a number of previous promotion campaigns, emphasizes that he is not the chairman of the current undertaking.

Development of the promotion campaign is in the hands of Cole & Weber, advertising agency, Republic Building, Seattle.

Puget Sound Herring Fishing Picks Up

After an exceedingly dismal start, in which only about 500 tons was taken during the first established season for herring reduction on Puget Sound, deliveries picked up sharply during a season extension designed to provide fuller test of the potential of the business.

With one boat working a mid-water trawl and several small seiners fishing, rather good production developed about the middle of April, largely in Bellingham Bay. The fish there were very small and the state authorities found it necessary to close the fishery in the bay in order to protect the small fish and to provide for bait.

Total landings for the year were believed to have doubled during the extension of the season.

Van Camp Leases New Office Building

Van Camp Sea Food Co. Inc. was granted a lease on ground and a building to be built on Pier A in Long Beach last month. The lease had been under some controversy by Long Beach building owners' groups. Long Beach City Attorney Wahlfred Jacobson ruled in favor of the canning company and the Long Beach Board of Harbor Commissioners.

Under the lease, Van Camp will occupy a two-story, 36,544-sq.-ft. building to be built by the harbor department.

THERE'S A GROWING Demand for

Quality Pink Salmon

KELLEY-CLARKE CO.
2460 6th Ave. S.
Seattle 4, Washington

DATA ON BRISTOL BAY OPERATIONS

YEAR	Number of Canneries Operated	Canning Lines in Operation	Number of Other Operations	Total Boats Fishing Salmon	Total Set Nets Fishing	Total Fathoms of Gear Operated	Number of Salmon Caught	Canned Salmon Pack (full cases)	Number of Salmon Used for Other Purposes than Canning (or Shipped Uncanned)	YEAR
1935	8	15½	3	181	169	35,600	3,116,493	245,047	75,140	1935
1936	23	91	8	1,102	410	170,900	21,051,695	1,450,856	164,996	1936
1937	22	83	7	1,086	313	166,750	21,282,098	1,459,450	107,068	1937
1938	17	67	...	1,006	189	160,350	25,295,927	1,834,436	(None)	1938
1939	22	96	2	1,219	268	196,250	14,300,806	1,154,921	7,644	1939
1940	8	36	11	503	233	87,100	5,318,481	446,513	136,507	1940
1941	16	50	3	791	225	129,900	6,958,140	642,977	30,472	1941
1942	6	12	...	224	65	36,850	6,732,502	469,624	(None)	1942
1943	11	33	...	633	158	102,850	17,749,837	1,320,286	(None)	1943
1944	12	35	1	655	187	106,780	11,957,230	982,802	8,840	1944
1945	8	17	7	316	207	58,250	7,978,607	644,072	68,546	1945
1946	16	42	11	777	215	126,150	8,406,905	682,180	175,951	1946
1947	17	49	7	928	340	142,064	18,937,386	1,376,722	130,655	1947
1948	20	59	2	1,053	403	178,730	15,156,876	1,316,168	66,492	1948
1949	19	32	8	731	467	132,115	6,805,568	563,020	202,415	1949
1950	13	26	17	520	516	102,095	7,402,764	586,555	364,122	1950
1951	16	28½	20	717	504	119,120	4,615,607	342,075	672,740	1951
1952	21	46½	17	1,118	463	187,575	11,464,559	758,809	1,584,839	1952
1953	15	33	17	1,153	345	290,200	6,541,852	488,083	754,298	1953
1954	12	16*	15	712**	313	120,795	5,235,803	357,254	943,023	1954
1955	9	17½	21	899	317	153,999	4,857,751	347,474	580,294	1955
1956	9	15	19	716	277	121,250	9,440,466	571,613	1,059,208	1956
1957	12	23½	23	1,012	233	159,150	6,378,052	508,685	922,545	1957

NOTE:- Data in this table, compiled by U.S. Fish & Wildlife Service, are for Bristol Bay area only - NOT including the Yukon-Kuskokwim, Port Heiden or Herendeen Bay - Port Moller districts. Figures for boats and gear include those used in connection with salteries and freezers. Figures for the canned pack (preliminary compilation of Fish & Wildlife Service) are different from those in other tables in this issue.

Data for last year are preliminary only, subject to later correction.

* In addition to the lines shown, 3 hand-pack lines were operated in 1954.

** Of the boats fishing in 1954, 15 were sailboats with outboard motor auxiliaries. No power boats were permitted prior to 1951.

Japan's King Crab Target 410,000 Export Cases

"Provisional" target for Japanese canned crab production in 1958 was set at the end of January — "provisional" because the Japan-Soviet fishery treaty meetings were then under way in Moscow, with the possibility that it might produce alterations in the crab program.

The King crab production target for mothership operations called for production of 404,000 cases by five ships, with 360,000 cases listed for export. The export target of the shore-based King crab pack was provisionally set at 50,000 cases, for an export King crab total of 410,000 cases, basis of 48 halves.

Market estimates counted on the U. S. market taking 250,000 cases, with perhaps 100,000 cases to the U. K. and other countries absorbing 60,000 cases. A slight increase was granted in the promotion allowance provided by the packers in favor of the exporting firms.

For Kegani crab the target was set on a "hopeful" basis at 250,000 cases, with 100,000 tabbed for the U. S. and 120,000 for the U. K. This species has shown some evidence of declining abundance, with 1957 producing only 190,000 cases out of the year's target of 280,000.

Quaker Promotions

Robert L. Cox of Long Beach, Calif., last month was appointed Western Division Sales Manager of Puss 'n Boots cat food division of Quaker Oats Co. Mr. Cox joined Quaker Oats in 1947 as a retail salesman and was assistant sales manager of the Western Division until his recent appointment.

Anthony J. Dimino was named manager of export and South American operations for Quaker Oats. He was also made vice-president of Quaker Oats Pan-American, Inc., an affiliate. Mr. Dimino was formerly manager of Productos Quaker, SA, of Cali, Colombia, a Quaker subsidiary.

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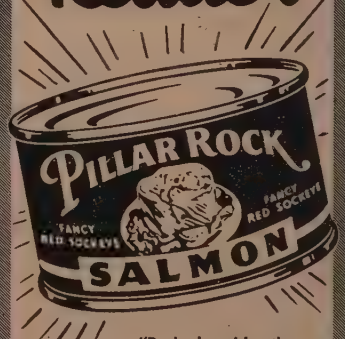

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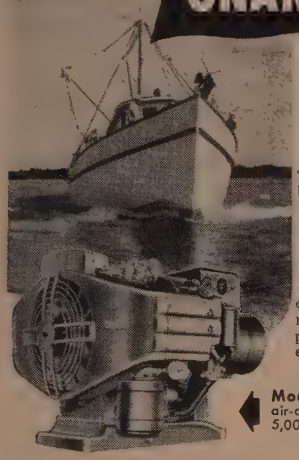
ONAN Electric Plants



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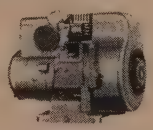
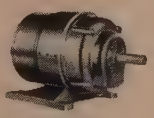
Model 5DRP—Two-cylinder, air-cooled Diesel engine. 5,000 watts A.C.

A Model to Fit Your Craft

Model 3DSP 3KW One-cylinder Diesel



Air-cooled models; 500 to 10,000 watts, gasoline.



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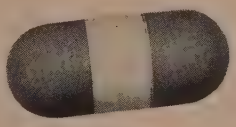

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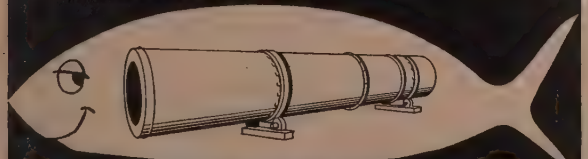

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OREGON OTTER TRAWL LANDINGS

YEAR	SOLE				Flounders	"Turbot"	"Cod" Miscel.	Lingcod	Rockfish	Ocean Perch	Total
	Petrale	English	Dover	Other							
1942	3,745,236	227,783	2,308,308	1,671,162	443,840	71,137	47,255	989,142	1,728,299	1,086,242	12,318,404
1943	3,805,094	898,639	6,431,666	2,239,125	858,051	2,831,013	32,731	934,878	6,762,494	1,601,368	26,395,059
1944	2,019,148	1,057,701	1,593,469	254,400	877,048	700,147	594,810	1,208,051	11,266,874	398,836	19,970,484
1945	1,574,143	1,096,601	2,704,216	238,507	1,024,288	168,811	412,731	1,015,215	17,365,866	40,554	25,640,932
1946	2,984,092	3,950,609	3,197,988	132,136	1,279,839	297,708	260,574	1,150,803	10,671,012	31,310	23,956,071
1947	1,443,936	1,883,438	2,031,905	139,791	667,347	723,497	30,194	569,226	4,637,594	92,344	11,688,763
1948	2,605,460	3,266,422	2,802,181	272,878	1,428,660	1,219,208	29,083	798,952	3,890,003	338,739	16,651,586
1949	1,514,762	1,092,493	3,003,574	299,785	272,042	1,723,963	4,821	728,464	3,307,595	591,842	12,539,341
1950	3,151,833	2,399,103	6,306,144	392,775	355,125	...	349,660	649,719	4,018,991	Dogfish	17,623,350
1951	2,052,366	2,420,333	8,227,444	859,820	351,001	...	672,656	887,187	1,659,212	3,524,208	20,654,227
1952	1,545,540	1,949,294	7,289,059	1,308,778	242,535	...	388,111	511,269	3,722,048	4,431,991	21,388,625
1953	1,028,578	1,784,309	3,146,709	1,989,828	317,293	844,921	419,852	315,347	3,012,714	3,281,106	16,140,747
1954	959,674	1,417,588	2,580,257	2,096,807	561,723	1,112,708	1,190,474	276,952	2,608,517	2,882,847	15,687,547
1955	1,584,946	1,392,162	3,549,087	2,946,087	827,285	1,822,344	2,603,029	419,611	3,183,917	2,847,851	21,176,319
1956	1,204,203	884,026	2,557,140	2,254,749	261,566	609,842	10,013,316	251,033	2,456,212	3,199,251	23,691,338
1957	2,173,978	1,692,966	3,691,189	595,117	460,453	...	11,866,762	595,796	3,566,518	3,324,465	27,967,244

Seattle Trawl Owners Settle With Crews

Members of the Fishermen's Marketing Association, Seattle, comprised of Puget Sound trawler owners, and the Otter Trawlers Division of the Alaska Fishermen's Union late in February settled the stalemate which had held the boats in port over two months, during much of which the petrale season was closed, while holidays and weather also contributed.

The settlement hinged on the boat share, and was concluded on a basis of 40% of the gross stock for vessels with standard equipment and 43% with those equipped with reels.

Puget Sound Trawling Set-up Is Stabilized

The scrambled affairs of the Puget Sound trawl fleet took on new stability during the late winter idle period, and the fleet readied for sea at press-time with its organization arrangements stabilized to a degree which has not prevailed since the Federal government took the position that crewmen and vessel owners could not legally operate through the same organization.

Trawl crews seem to have worked out their problem through the medium of the Otter Trawlers Division of the Alaska Fishermen's Unions, one of the oldest and most stable organizations in the whole history of labor unions in the fishing industry.

The Fishermen's Marketing Association, composed of vessel owners, in February selected John Wedin as its manager. He is the publisher of a fishermen's newspaper and a marine radio broadcaster, and at one time was business agent of the former Otter Trawlers Union on Grays Harbor. He will manage the F.M.A. while continuing his publishing and broadcasting work.

Joseph Hidzick Dies

Joseph F. Hidzick, 67, veteran Bristol Bay salmon cannery superintendent, passed away in San Francisco recently.

Mr. Hidzick started in the fish industry at the Semiahmoo, Wash., plant of Alaska Packers Association in 1912. In 1913 he worked for the APA at Nushagak. For the next two seasons he worked at the Wood River cannery of Alaska Salmon Co. at Nushagak, and in 1919 he was made superintendent of that plant, a position he held until his retirement in 1939.

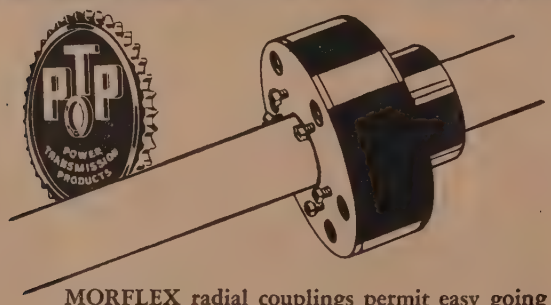
Mr. Hidzick also worked for the Union Fish Co. and on the sardine reduction barge *Peralta*, when the Bristol Bay salmon season was closed. He leaves a wife, Rose Elizabeth, two sons, Joseph F. Jr., and George M., a daughter, Mrs. Helen Cresci, and eight grandchildren.

Ecuador Shrimpers Get Diesels from Calif.

Inter Harbor Diesel Service, operated by L. R. (Shorty) Ames, in Wilmington, Calif., has sold to the Inepaca Corporation at Manta, Ecuador, three reconditioned GM 6-71 diesel engines, one with 2:1 reduction gear, another with 3:1 gear. The third 6-71 will power a 60-kw. generating plant. Engines will be installed in boats now being re-outfitted at Manta.

Principal product is shrimp.

MARINE COUPLINGS



MORFLEX radial couplings permit easy going in the roughest seas. Damaging vibration due to motor or shaft misalignment is virtually eliminated. Movement of the engine on its mounts is compensated for with couplings from POWER TRANSMISSION PRODUCTS.

Neoprene couplings permit smoothest operation. Morflex absorbs vibrations, eliminates electrolysis between shaft and engine and permits *quiet* operation of the screw. Call POWER TRANSMISSION PRODUCTS; their experienced engineers can solve your torsional problems.

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T. I. P. — Transistorized Power Inverter

Compact Power Source for the Electronic Fisherman

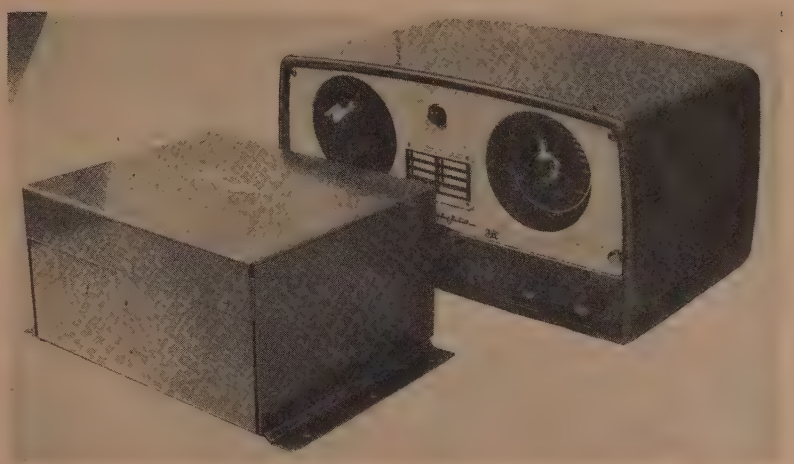
● First shown on the Pacific Coast at the Seattle Boat Show in December were a number of "gray boxes" that changed direct current from storage batteries to 110-volt, 60-cycle alternating current—in big enough quantities to startle the marine industry. Inside each "gray box," called a "Transistorized Power Inverter," were a group of power transistors — that accomplished this changing of d.c. to a.c. silently, without vibration or motion of rotary parts.

The impact on the marine industry of Transistorized Power Supplies can be very wide—because practically all modern two-way radios, depth indicators, DFs, radar and loran, operate from a.c. power supplies. From the boat owners' standpoint, it means that, regardless of the voltage of his batteries, he can operate other power tools in addition to all his navigation equipment, from one common power source that delivers 110 v. a.c. Until now, he has had to buy rotary or vibrator power supplies for each piece of a.c. equipment, or, in the case of two-way radios, direction finders, loran, fish scanners, depth indicators, and radar, pay the price of converters that were either integral or accessory to the equipment he wanted.

Another problem to the owner who wants good navigation and communication equipment has been the necessity of running heavy and costly low-voltage, electric cables from the batteries to each piece of equipment that was to operate from 12, 24, or 32 volts d.c. through either a rotary or vibrator inverter. Transistorized Power simplifies wiring, because the unit would be located close to the batteries and lighter weight, less expensive wiring for the 110 v. a.c. would be run to each piece of equipment to be operated.

For the electronic equipment sales and servicing organizations, the availability of Transistorized Power Supplies simplifies inventory, repair parts and service problems. Dealers will need to stock only two basic types of Transistorized Power Supplies.

Analysis of service work on electronic equipment shows that about 50% of the troubles have come from



Transistorized Power Inverter, foreground, that converts 12, 24 or 32 volts d.c. to 115 v., 60-cycle a.c. This unit is rated at 500 volt-amperes, which is more than sufficient power simultaneously to operate the Bendix 6-channel 2-way Skipper radio, shown with it, the new Bendix automatic direction finder and the largest Bendix depth recorder. Here is magic for the fisherman in a "little gray box."

power supplies. The performance being obtained from Transistorized Power Supplies indicates that this annoyance and expense to both the boat owner and dealer can be completely eliminated—because of the complete lack of moving parts and inherent dependability of transistors.

Another advantage of this new development is the lack of heat from Transistorized Power Supplies as compared to the heat normally radiated from either rotary or vibrator power supplies. The heat radiated is an indication of efficiency—the higher the heat, the lower the efficiency. With Transistorized Power Supplies, the efficiency of changing d.c. to a.c. is 80% or more—as compared to 45% for former types. The result is a very small amount of radiated heat that must be ventilated from around the unit.

The job of changing large amperage, low voltage direct current to 110 v. a.c. without the need for mechanical motion or the break of electrical contacts is accomplished by the transistor's ability to act as a conductor of electrical current flow of one direction and as a non-conductor of electrical flow of the opposite direction.

Bendix Marine reports that development of this new concept of power supplies has spanned a number of years in their search for greater reliability of marine communications and navigation equipment. Achievement of the goal is now reflected in a complete line of Transistor Power inverters with outputs ranging from 100 v.a. (approx. 100 watts) to 2000 v.a. (approx. 2000 watts) delivering 115-volt 60-cycle current, from 12, 24, 32, 72, 110 or 220 volt direct current battery inputs.

It is said to be impossible to damage the Bendix Transistorized inverter unit with overloads, as overload protection is entirely automatic.

It is recognized that a normal battery generator installation will produce a varying input voltage. The Bendix transistorized inverter has been designed to operate over even wider input voltage extremes than is normally experienced. The unit will start and run at input voltages as low as 30% below nominal. Application of continuous overvoltages up to 20% higher than normal will not cause damage. A typical 32 volt unit has been operated with as high as 48 volt peak surges without damage.

Twin Canadian Drag Boats Sharp in Instrumentation

● Two new 72' draggers from the A. C. Benson shipyard in Vancouver, B. C., will be operating during the coming summer off the west coast of Vancouver Island — the *Gail-Bernice* for Hank McBride, and *Renown* for Jack Parker.

Both these men have been fishing for some years in coastal waters, latterly for B. C. Packers. Mr. McBride is the owner of the dragger *Sharon M* and Mr. Parker has the seiner-dragger *Pender Isle*.

Both the new vessels are powered by Buda diesel engines, 270 hp. Model 8-DCMR 2505, developing 900 r.p.m. with Western Gear 3:1 reduction.

Dimensions of each vessel are identical—72' in length, with 20'6" beam and moulded depth of 9'5". They were designed by A. C. Benson.

Carrying capacity is estimated at 120 tons. Fuel carying capacity is 4,000 gallons. Propellers have 62" diameter and 45 pitch, both being designed by Bob Osborne, Vancouver. The auxiliary diesel on Mr. Parker's boat is a Mercedes-Benz 40 h.p. four-cycle unit. This boat is entirely hydraulically driven, installations being made by Tridel Equipment Co., Vancouver.

Of conventional design and construction, the hulls are of yellow cedar, with bottom planking and decking of Douglas fir. Yellow cedar beams are topside, and covering boards, house frame, combings and rim timbers are of fir. Sterns are of typical seine boat design.

Though smart in appearance and rugged in construction, *Gail-Bernice* and *Renown* are distinguished principally by their unusually complete equipment, and in this respect they represent somewhat of a departure from the usual British Columbia fishing vessel.

For instance, they have radar installations effective from a maximum of 16 miles to a minimum of 25 yards, making it particularly well suited for work boat operation on this coast where fog and other weather conditions are frequently a hazard.

Radio telephones have been supplied by Wesco, and the echo sounder by Sounder Sales & Service, which also represents Lavoie Laboratories in British Columbia. For dragging purposes the vessels are being equipped with Bendix and Echolite apparatus to give a more complete bottom picture.

Griffith MARINE LINE

...Gets rid of the JERK!

LIVE NEOPRENE SNUBBERS

Gets rid of damaging jerks, jolts, shocks. Special formula neoprene withstands prolonged exposure to sun and salt spray.

MOORING SNUBBER
Insert into mooring or lashing rope. Has scores of uses.
Length 22" Diameter ½"
Tested Strength 1,000 lbs.
$2.95

TOW LINE OR ANCHOR SNUBBER
Clamp or chain into anchor line or tow line to absorb pounding of waves.
Length 7 Diameter 2"
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$45.00

TROLLING TUBING
3/8" O.D. x 1/8" I.D.....16¢ ft.
7/16" O.D. x 1/8" I.D....17¢ ft.

NEW DELUXE TUNA TROLLING TUBING
1/2" O.D. x 3/32" I.D.
Ocean-tested for two years.
35¢ ft.

TROLLING SNUBBERS
Standard 14" length with heavy metal line swivels and snaps for commercial fishing. Solid eye, swivel end .....$10 doz.
Kolstrand double snap or improved No. 9 snap with swivel end.....$12 doz.*
*With ball bearing line swivels ... ..$18 doz.

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Bluefin and Skipjack In Northwest Waters

Appearance of Skipjack and Bluefin tuna in waters off the Oregon and Washington coasts was reported as the North Coast tuna season waned.

First Skipjack reported was a 6-pounder, taken in a school of Albacore off the Rogue River, Ore., by the Seattle troller *Spirit*.

Bluefin were more plentiful and a considerable number were reported, running from 9 to 38 lbs. One of the first was picked up by the *Brejo*, operated by Jalmar Johnson out of Astoria, fishing 30 miles south of the Columbia.

Usually warm surface water temperatures, which were reported as high as 69°, were credited with the unusual northward extension of the range of these tunas.

Hydraulic Transplanting Used by Coast Oyster

Coast Oyster Co., California's largest producer of fresh oysters, at its Eureka plant, now transplants oysters hydraulically, as well as harvests them that way.

A 500-gpm. pump has been mounted on a steel barge, and one man with a hoze with nozzle pressure of 125-lbs. washes 2500 bushels of oysters off evenly onto the beds in an hour and a half.

The company transplanted 1500 cases of seed from Willapa Harbor. The seed was inspected by a man from the California Department of Fish & Game, who works under Dr. H. G. Orcutt, biologist with the Marine Fisheries branch of the department, who has done so much to help in the rejuvenation of California's oyster industry.

Calif. Cannery Inspection Supervisor Succumbs

Lincoln Smith, supervisor of the Cannery Inspection Section, California Bureau of Food and Drug Inspection, died recently at Long Beach after a long illness. Mr. Smith had been employed by the bureau continuously since 1926. He is succeeded by George F. Bender, who joined the bureau in 1926. Mrs. Smith continues as secretary of the inspection office on Terminal Island.

HALIBUT FREEZING IN CANADA BY MONTHS

(Pounds)

Year	Jan.	Feb.	March	April	May	June	July	August	September	October	November	December	TOTAL
1943	282,093	296,651	379,829	573,065	2,311,086	2,630,088	654,403	683,421	1,149,085	175,542	100,641	86,663	9,322,567
1944	282,698	273,600	348,847	86,289	314,432	5,465,098	3,232,596	802,380	499,926	436,090	171,886	195,405	12,109,247
1945	394,811	222,238	240,413	220,018	3,489,342	3,408,682	3,408,682	645,187	924,675	924,671	623,475	362,478	14,864,672
1946	183,346	344,076	571,122	10,869	4,558,350	3,798,912	849,659	1,403,497	335,440	174,361	304,517	166,185	12,700,334
1947	332,759	217,645	358,022	167,994	6,059,714	4,782,689	2,186,016	2,575,403	287,595	206,741	52,711	18,000	17,245,289
1948	132,000	68,000	186,000	21,000	7,623,000	4,530,000	1,541,000	210,000	276,000	56,000	182,000	*	14,825,000
1949	30,000	7,000	21,000	49,000	7,821,000	4,990,000	1,878,000	402,000	85,000	340,000	43,000	9,000	15,675,000
1950	10,000	41,000	41,000	260,000	8,953,000	4,991,000	2,039,000	392,000	90,000	321,000	237,000	(2)	17,375,000
1951	16,000	42,000	32,000	87,000	11,499,000	3,071,000	560,000	1,109,000	164,000	44,000	7,000	21,000	16,652,000
1953	79,000	136,000	119,000	165,000	5,662,000	9,498,000	2,487,000	2,175,000	222,000	77,000	15,000	3,000	20,638,000
1954	49,000	112,000	181,000	110,000	6,367,000	9,266,000	2,696,000	2,951,000	262,000	130,000	91,000	16,000	22,231,000
1955	102,000	128,000	186,000	42,000	5,077,000	4,621,000	7,641,000	2,312,000	1,747,000	121,000	68,000	72,000	22,117,000
1956	132,000	203,000	107,000	141,000	2,209,000	5,456,000	2,661,000	2,341,000	2,298,000	206,000	28,000	29,000	15,811,000
1957	69,000	108,000	107,000	273,000	5,966,000	10,585,000	2,299,000	2,489,000	1,041,000	*	*	*	22,937,000

NOTE: - 1952 data not available. *Data not available.
All figures in accordance with latest reports.

(2) Less than three firms reported, therefore the data may not be shown.
Source: Dominion Bureau of Statistics - Ottawa, Canada.

George Johansen Certain Of A.F.U. Re-Election

George Johansen, secretary - treasurer of the Alaska Fishermen's Union, was assured of re-election to his eighth term when the period for nominations closed without another candidate being proposed.

Swan Lundmark, assistant secretary-treasurer, is being opposed by Olaf M. Johnson.

Abe Lehto, San Francisco; Swan Ohman, Portland; and Jack Woods, Bellingham, were nominated without opposition. Five men were nominated for the three places from Seattle on the union's policy committee. They are: Floyd Bryant, Henry Gruntman, Fred Hegre, Rasmus Mikkelhaug, and Arnold Roswick.

B. C. Canners Order Tinplate in Britain

British Columbia canning interests have placed an order for 3,000 tons of tin plate with the Steel Co. of Wales, whose main operation is at Margam, world's largest single integrated steel plant.

This is a repeat order, as similar purchases were made last year.

The tinplate will be used for the production of cans for the fish and processed fruit and vegetable industries of British Columbia.

The purchase was made partly as a gesture of goodwill in recognition of the importance of the United Kingdom as a buyer of British Columbia canned salmon.

Tim Vogel Dies

Tim Vogel, 86, a veteran Alaska salmon canner of an earlier generation, died at Seattle early in December.

He organized the Haines Packing Co. at Letinkof Cove, near Skagway, Alaska, in 1916 and operated it until the early '30s when it was acquired by the late E. M. Brennan and others connected with P. E. Harris & Co.

Since Mr. Brennan's death the plant has been operated by his sons, J. E. and T. M. Brennan.

13 Crewmen Saved As "Sun Pacific" Sinks

Thirteen San Diego fishermen were rescued after their tuna clipper *Sun Pacific* sank in a hurricane 80 miles off the Coast of Mexico. United Fruit Co.'s banana freighter *Limon* heard the boat's radioed message for help and hove to at the scene just as the *Sun Pacific's* decks went awash. An hour after its crew was plucked from the sea, the *Sun Pacific* went to the bottom.

Rescued were Harold Holbrook, master; Frank Valin, Jr., skipper; Manuel Mamede, engineer; Paul Blocker, oiler; William Farkus, cook, and seamen Carlos Jardin, Manuel Lus, Anthony Placido, Joseph Moniz, Jesus Duarte, Domingoes Silva, Antonio Costa and Jose Da Luz.

Shepherd Advances Claypool

Shepherd Marine in Los Angeles reports that Charles Claypool has been appointed advertising manager. Mr. Claypool worked for Shepherd Marine first in the parts department, then as parts field representative and until recently was in charge of governmental sales. He took over the advertising for Shepherd last August.

"Corned Tuna" Offered Domestically in Japan

"Corned Tuna", packed from prime Yellowfin by a patented process which is said to produce a close approximation of canned corned beef, is being introduced in Japan's domestic market.

The specialty is packed by Shimizu Suisan K.K., one of the leading tuna packers of Japan, of which Hiroshige Sugiyama is managing director.

Christian Brokerage Co. Moves to New Location

The Christian Brokerage Company and subsidiary, Parrott Bonded Warehouse, announced their recent move to their new building, 1354 Milledge Street, East Point, Ga. The building contains approximately 25,000 square feet of warehouse space and 5,200 square feet of office space and was completed at a cost of $200,000.

Noyo Trollers Improved

Charles Wirtanen, owner of the troller *Betty Arlene*, had some remodeling work done on her at Makela Bros. Boat Works, Noyo Harbor, Fort Bragg.

Donna, trawler, owned by Carpenter brothers, Bodega Bay, which fished shrimps last season for A. Paladini, Inc., Fort Bragg, underwent a big remodeling job at Makela Bros. Boat Works, Fort Bragg, which included a new deck, house, rails, guards, etc.

Calvin Armstrong, Bodega Bay, has repowered his troller *Verna A.*, with a rebuilt GM 3-71 diesel engine, purchased from West Coast Engine & Machine Works, Noyo Harbor, Fort Bragg.

Pulp Liquor Barging Requested by Oystermen

A group of oyster growers with interests in the vicinity of Anacortes and Padilla Bay and Similk Beach, with R. H. Bailey of Seattle as spokesman, recently requested the Washington Pollution Control Commission to require pulp mills in the region of their oyster beds to barge waste sulphite pulp liquor from confined tidal waters to the open tidal channel of the Strait of Juan de Fuca for discharge.

A year's trial to determine if this would correct conditions unfavorable to oyster growth was requested.

J. Frank Hoagland, new vice president of Columbia River Packers Association, is in charge of fishermen relations and fish purchasing.

Sailfish Drives Bill Through Tunaman's Hull

Miguel Pereira, crew man of the tuna clipper *Sun Glow,* suffered a painful but not serious injury in an encounter with a sailfish off Capt San Lazaro, Baja California, in late November.

Accidentally knocked into the water by his fishing partner, who tried to avoid the thrashing of the 300-lb. monster hooked by a nearby team, Pereira tried to escape the heavily armed enemy by climbing back aboard the *Sun Glow.* But before he could reach safety he was rammed at the stern from starboard and deep below the waterline. "I'm hit!" he shouted.

So powerful was the submarine enemy's attack and so thin Pereira's armor that the saber passed entirely through his hull. Only quick action by a friend who held him fast prevented Pereira's being carried off as a prize of war.

Solons Get Tuna

In the midst of Washington hearings over tariff and quota proposals on tuna imports, several cans of the tasty sea food were presented to the President, the Vice-President, and California's Senators Knowland and Kuchel. The presentation was made by O. R. Hayes, president of the Canners League of California as part of an observance of the 100th anniversary of California's canning industry.

Besides tuna, the officials got samples of sardines, figs and lemon juice.

* * *

Josie Lena, San Francisco trawler, Joe Piazza, skipper and owner, was sold through Don Woodward, Oakland, to Russo Bros., San Pedro.

Halibut Fishermen Seek To End Freezer Picketing

Picketing of the Rainier Port Cold Storage Co. plant at Spokane Street Terminal, Seattle, is crippling the Seattle halibut business, Clarence R. Nordahl, secretary of the Deep Sea Fishermen's Union, declared recently in announcing a drive to seek re-opening of the big plant, which has been closed to fish deliveries by union boats since July, 1957.

If the condition continues until the opening of the halibut season in May, Mr. Nordahl said the business at Seattle will suffer a crippling setback, due to elimination from the market of firms which traditionally have depended upon the big custom freezer for handling their frozen packs.

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Fishermen's Community Builds on Spider Island

W. P. Dixon of West Vancouver, B.C., is establishing a new fishing community on Spider Island on Queens Sound, 300 miles north of Vancouver, a few miles from Namu.

Mr. Dixon is managing director of Gulf Fish Co., and he says that a good start has been made on construction of 500 houses on Spider Island.

While Gulf Fish Co. has bought property near Bella Coola for the location of a reduction plant, no industrialization is planned for Spider Island, which will be intended as a residential area for fishermen, with special facilities for the fishing fleet with wharves and oil docks.

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portion controlled steaks
Complete line of
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SAN JUAN FISHING & PACKING CO.
SEATTLE, WASHINGTON

LINES and LEADERS

Chapman-Nowak Awarded Columbian Rope Account

The Columbian Rope Co., of Auburn, N. Y., one of the world's largest producers of cordage fibers, has named Chapman-Nowak & Associates, Inc., Syracuse, N. Y., to handle its product publicity and public relations, effective immediately.

John E. Lynge, Director of Publicity-Public Relations, will service the account.

Chapman-Nowak already handles the advertising program for Columbian Rope Co.

Norseman Marine Names Fellows & Stewart Distributors

Norseman Marine has announced the appointment of Fellows and Stewart of Los Angeles as distributors for its complete line of marine engines in the southern California area .

A pioneer company in the marine field, Fellows and Stewart have been building and servicing all types of marine craft since 1896. Their main plant occupies 17 acres on Terminal Island.

As Norseman distributors, they will sell and service the complete line of Norseman Marine engines consisting of the Knight, Bluefin, Tarpon, Bullet, Marlin, Arrow, Colt, and Elf and the new Outboard Z-Drive, covering a range of 155 to 23 horsepower. In addition, they will stock a complete line of repair parts and accessory equipment.

Continental Adds Big Plant To Pacific Facilities

Continental Can Company today has acquired the giant Crown Zellerbach plant in San Leandro, Calif.

According to Horace M. Blinn, vice-president in charge of Continental's Pacific Metal Division, acquisition of the seven-acre building will nearly double the size of the company's East Bay facilities, and is the first step toward overall expansion of the Alameda County operation. Continental already has a 420,000 square foot metal fabricating plant in Oakland close to the new structure.

Mr. Blinn said the new facilities will initially be used to consolidate all Oakland warehousing operations, but ultimately will house several of the manufacturing departments. Continental also has seventeen other manufacturing plants in California and the Northwest.

George Hartmann Heads Roebling's Rope Sales

E. George Hartmann has been elected vice president - sales of John A. Roebling's Sons Corporation, it has been announced by C. R. Tyson, executive vice president.

The Roebling firm, which is a subsidiary of The Colorado Fuel and Iron Corporation, is a nationally known manufacturer of wire and wire products, widely used by Pacific fishermen. Mr. Hartmann will be located at the corporation's main office in Trenton, New Jersey.

Prior to his appointment, Mr. Hartmann was general product manager of the Wire and Cold Rolled Products Division of the Roebling Corporation. He has had over 37 years' experience in the wire industry.

American MARC Pioneers With First Diesel Outboard

American MARC, Inc., Inglewood, California, announced late in January that it will be manufacturing the world's first diesel outboard motors later this year.

Designated the American MARC 10, the new outboard motor is a one-cylinder, two-piston opposed, air or water-cooled power plant of seven and a half horsepower. Compact and light in weight, it has no magneto, spark plugs or carburetor. It burns regular diesel fuel and requires no mixing of fuel with lubricating oil.

Stroke is 2½" bore 1 7/8" x 1 7/8", displacement 18½ cu. inches. Compression ratio is 20 to 1. Fuel enters the combustion chamber by metered injection. The crankcase is fully scavenged.

By coupling cylinders, American MARC will produce outboard motors of 7½, 15 and 22 h. p.

These new motors, considered the most revolutionary development in outboard motor design, will not be released until component parts of the complete assembly (drive shaft, propeller gearing, etc.) have been thoroughly tested to assure the dependability and long life that is characteristic of diesel engines.

For additional information write to 1601 West Florence Avenue, Inglewood, California. Say you saw it in **Pacific Fisherman,** please.

Johnson Motors Pick Hallett To Handle Sales Job

James A. Hallett has joined Johnson Motors, Waukegan, Illinois, as an assistant sales manager, it was announced by W. H. Jonas, director of sales and advertising.

Mr. Hallett joins the Johnson sales organization after 20 years experience in sales, engineering and administrative work.

His previous posts include executive sales and service positions with the Kiekhaefer Corporation and Martin Outboards.

New Formulations For Navicote Finishes Announced

Introduction of new Navicote Finishes with completely new formulations was announced recently by J. M. Creager, president of Hart and Burns Co., division of Devoe and Raynolds Co., Inc.

Complete with a newly-designed label, the Navicote line rounds out a wide range of commercial and bottom finishes marketed internationally by Hart and Burns.

Featuring a 14-color assortment, the line expands to 28 colors which the Hart and Burns Company believes to be the season's most preferred colors.

Formulated by the staff of chemists at the Hart and Burns Riverside plant, the Navicote yacht finishes are reported to be highly durable, have high initial gloss, excellent leveling quality and high color retention.

Free Valuable Diesel Data Booklet Prepared by G.M.

What Diesel engine users should know and look for when selecting engine fuel is outlined in a 16-page illustrated booklet just released by the Detroit Diesel Engine Division of General Motors.

Entitled "Fuel Oil and High-R.P.M. Diesel Engines," the booklet applies to all makes of diesels which operate between 1200 and 3000 r.p.m. and are used in such applications as busses, trucks, earthmoving equipment, pumps, oil rigs, air compressors, boats, generator sets, etc.

The booklet points out the effects of various grades of fuel on Diesel engine life and performance. It includes a fuel selection chart to assist engine owners and operators in selecting the type of fuel that will result in the most satisfactory operation of their engines.

Copies may be obtained from GM Diesel distributors or dealers or by writing the Detroit Diesel Engine Division, Detroit 28, Michigan.

J. E. Sanders, new sales representative for Bendix Pacific Division in the coastal area from Santa Barbara to San Diego.

J. E. Sanders Joins Bendix Sales Staff in California

Jack E. Sanders has joined the marine department of Pacific Division, Bendix Aviation Corporation, as sales representative for the Southern California area from Santa Barbara to San Diego, Marine Manager Walter P. Rhea announced.

Sanders was a former Bendix dealer when he was employed by Marine Radio Service, San Pedro, Calif. as sales manager. He previously was associated with Harbor Boat Building Co. and Presley Construction Co.

Bendix-Pacific manufactures the most complete line of marine electronic equipment in the country, including radar, automatic pilots, depth recorders, depth indicators, radio direction finders, radiotelephones, and portable electric generators.

Linen Thread Co. Research Leads to Plastic Division

Research in plastics by one of America's oldest and largest manufacturers of thread, twine and netting, has resulted in a new line of products for the company and the formation of a separate plastics division for their manufacture and sale.

H. E. Kegelman, president of The Linen Thread Company, Inc., New York, N. Y., has announced the formation of an Arkon Plastics Division under the direction of D. H. Spitzli, who took a leading part in the development of Arkon Plastics as the company's director of research.

A 500% expansion in production capacity for Arkon Plastics, and the increasing interest of industry in the properties of the material were reported by Mr. Kegelman as the reasons for setting up the new division.

The company's initial commercial success with Arkon was gained with its "Ark" floats, millions of which are reported to have been sold for use on commercial fishing nets.

International Paint Introduces Interlux Fiberglas System

"The increasing use of fiberglass for covering hulls and decks of pleasure and commercial craft has led International Paint Company to introduce into its line of boat coatings the Interlux Fiberglas System.

This new line incorporates the "two resin system" as introduced by Ev-R-Shield Products, Inc. It includes underkote resin, evenflow resin, hardener, color pigments, solvent, Interlux paint peeler and assorted widths of fiberglass cloth.

Investigation of the various types of resins in use convinced International that the use of two resins provides the most foolproof lamination possible.

It is available through all Interlux Distributors and Dealers."

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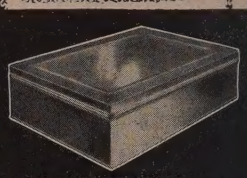

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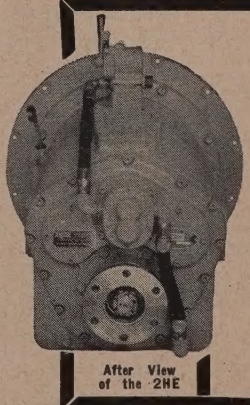

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We must solve our own problems!

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— Salmon that has the reputation of always being painstakingly packed draws to itself elements of support that are lasting.

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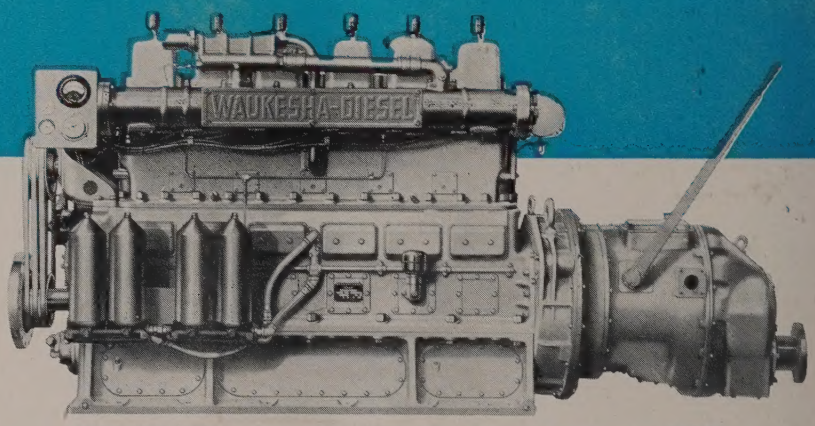

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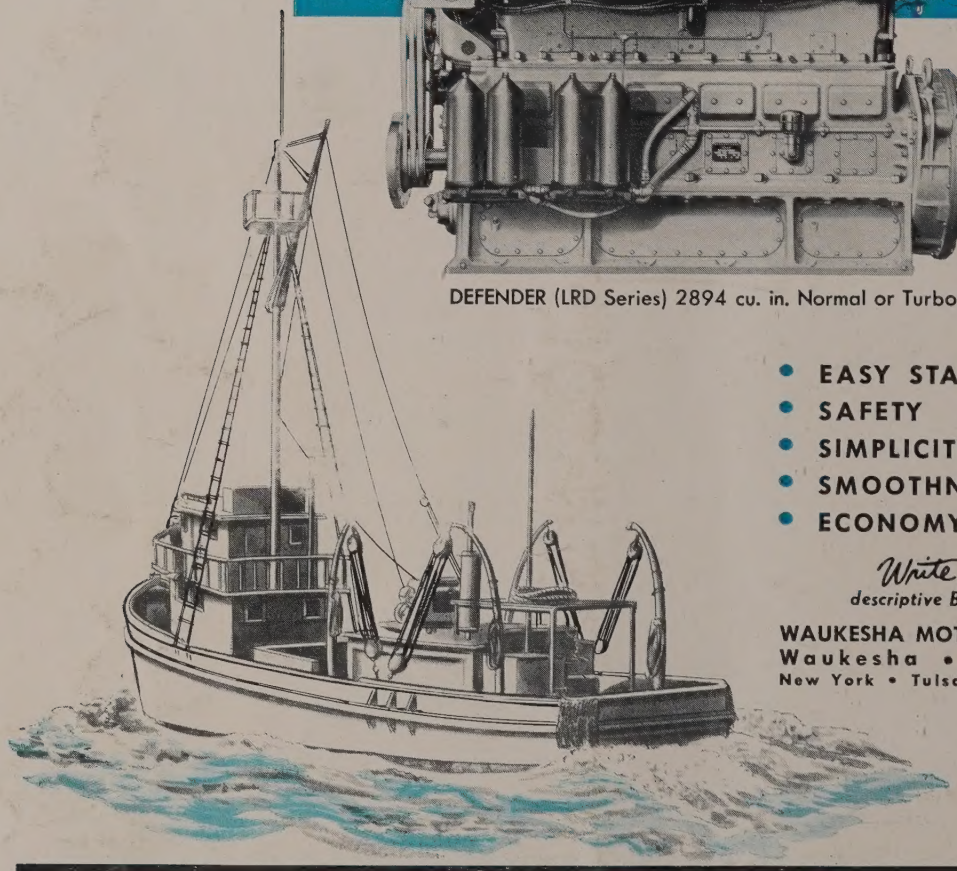

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342-R-1

WAUKESHA normal and turbocharged diesel marine engines

Engine Model	Engine Type	No. Cyls.	Bore and Stroke	Displ. Cu. In.	MAXIMUM RATING 24-Hour Duty
Reliance	Normal	12	8½ x 8½	5788	665 horsepower @ 1200 rpm
	Turbo	12	8½ x 8½	5788	990 horsepower @ 1200 rpm
Defender	Normal	6	8½ x 8½	2894	335 horsepower @ 1200 rpm
	Turbo	6	8½ x 8½	2894	555 horsepower @ 1200 rpm
Wanderer	Normal	6	7 x 8¼	1905	240 horsepower @ 1200 rpm
	Turbo	6	7 x 8¼	1905	315 horsepower @ 1200 rpm
Resolute	Normal	6	6¼ x 6½	1197	195 horsepower @ 1600 rpm
	Turbo	6	6¼ x 6½	1197	260 horsepower @ 1600 rpm
Vigilant	Normal	6	5¼ x 6	779	150 horsepower @ 1800 rpm
	Turbo	6	5¼ x 6	779	195 horsepower @ 1800 rpm
Cutwater	Normal	6	4¼ x 5	426	100 horsepower @ 2000 rpm
	Turbo	6	4¼ x 5	426	120 horsepower @ 2000 rpm